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ROCKY FLATS

**TECHNICAL MEMORANDUM NO. 1
INDUSTRIAL AREA
SURFACE-WATER AND SEDIMENT
FIELD SAMPLING PLAN**

**ADDENDUM TO PHASE 1
RF/RI WORK PLAN
OPERABLE UNIT NO. 12**



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TECHNICAL MEMORANDUM NO. 1

**INDUSTRIAL AREA
SURFACE-WATER AND SEDIMENT
FIELD SAMPLING PLAN**

**ADDENDUM TO PHASE I
RFI/RI WORK PLAN**

**ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE
400/800 AREA
(OPERABLE UNIT NO. 12)**

**U.S. DEPARTMENT OF ENERGY
Rocky Flats Environmental Technology Site
Golden, Colorado**

ENVIRONMENTAL RESTORATION PROGRAM

January 1995

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LIST OF ACRONYMS AND ABBREVIATIONS

AA	atomic absorption
AIP	Agreement in Principle
ASTM	American Society for Testing and Materials
CDPHE	Colorado Department of Public Health and Environment
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CLP	Contract Laboratory Program
CMP	corrugated metal pipe
CRDL	contract-required detection limits
CRQL	contract-required quantitation limits
CR-III	chromium III
CR-VI	hexavalent chromium
DOE	U.S. Department of Energy
DQOs	data quality objectives
EG&G	EG&G Rocky Flats, Inc.
EPA	U.S. Environmental Protection Agency
FSP	Field Sampling Plan
GRRASP	General Radiochemistry and Routine Analytical Services Protocol
HHBRA	Human Health Baseline Risk Assessment
IA	Industrial Area
IAG	Interagency Agreement
IDL	instrument detection limits
IHSSs	Individual Hazardous Substance Sites
IM/IRA	Interim Measure/Interim Remedial Action
IOU	Integrated Operable Unit
ITS	Interceptor Trench System
L	liter
MDL	method detection limit
mg/L	milligrams per liter
mL	milliliter
NBS	National Bureau of Standards
NPDES	National Pollutant Discharge Elimination System
OU	Operable Unit
oz	ounce
PCB	Polychlorinated Biphenyl
PCE	tetrachloroethylene
pCi/L	picocuries per liter
PRG	preliminary remediation goal
QC	quality control
RADS	radionuclide isotopes
RCRA	Resource Conservation and Recovery Act

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RDL	required detection limits
RFEDS	Rocky Flats Environmental Database System
RFETS	Rocky Flats Environmental Technology Site
RFI	RCRA Facility Investigation
RI	Remedial Investigation
SID	South Interceptor Ditch
SOP	standard operating procedure
SVOC	semivolatile organic compounds
TAL	target analyte list
TCE	trichloroethylene
TCL	target compound list
TDS	total dissolved solids
TOC	total organic compound
TSS	total suspended solids
UTLs	upper tolerance limits
VOCs	volatile organic compounds
WQCC	Water Quality Control Commission
WQCC SW	Water Quality Control Commission Statewide
YSI	Yellow Springs Instrument
µg/L	micrograms per liter
µmhos/cm	micromhos per centimeter
°C	degrees Celsius

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1.0 OBJECTIVES

This Technical Memorandum is a Field Sampling Plan (FSP) for the collection of surface-water and sediment samples in the Industrial Area of Rocky Flats Environmental Technology Site (RFETS). Surface water and sediment sampling is to be completed as part of the Integrated Operable Unit (IOU) Phase I, Stage 1 Resource Conservation and Recovery Act (RCRA) Facility Investigation (RFI) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Remedial Investigation (RI). This Technical Memorandum is intended to serve as an addendum to the *RFI/RI Work Plan*, 400/800 Area, Operable Unit (OU) 12 (EG&G 1992a) and will apply to OUs 8, 9, 10, 12, 13, and 14. The objectives of the OU12 RFI/RI field investigation are to characterize the nature and extent of contamination; support health risk assessment and environmental evaluation; and support corrective measures studies, feasibility studies, and treatability studies.

1.1 SURFACE-WATER AND SEDIMENT FIELD SAMPLING PLAN OBJECTIVES

The specific objectives of this FSP are not intended to meet all of the objectives of the OU12 RFI/RI but to provide a rationale for selection of (1) sampling locations, (2) analytical parameters, and (3) field procedures and equipment required to conduct sampling activities.

In addition, it will be necessary to meet the applicable data quality objectives (DQOs) per the Interagency Agreement (IAG) (U.S. Department of Energy [DOE] et al. 1991).

The DQOs applicable to this FSP are the following:

- Establish the presence or absence of contamination in surface waters and sediments that are migrating toward or across the boundaries of the Industrial Area.
- Collect data that will support human health baseline risk assessments (HHBRAs).

To meet the objective of determining the presence or absence of contamination in surface water or sediments, a multistage sampling frequency will be used. The rationale for using a multistage sampling approach is to collect data for surface water for comparison during the extremes of dry and wet conditions, and to collect sediment samples before scheduled ditch maintenance in February 1995 that will clear debris and sediment from the drainage system on plant-site to avoid spring flooding. The multistage approach will require three sampling events. The first sampling event will be performed in February 1995 before ditch maintenance to collect sediment samples and samples of surface water where possible. The second and third sampling events will involve surface-water sampling in the spring and late summer 1995, respectively. The second and third sampling events for surface water will generate data to determine the effects of differing moisture conditions and support identification of possible source areas where flow is intermittent.

An important DQO for the IOUs, as described in each OU work plan, is to collect data that will support a HHBRA. Data collected as part of previous investigations and monitoring programs were examined to determine the purpose and objectives of those programs and investigations. Data from programs and investigations that were not risk based, but primarily associated with regulatory compliance, did not meet the DQOs of this FSP.

Different program DQOs, chemicals of concern, and analytical detection limits preclude using the data to support human-health risk assessment. The data from programs and investigations that do not meet the DQOs of this FSP are considered "data gaps" and will be subject to investigation and evaluation under this FSP.

1.2 COORDINATION WITH OTHER INDUSTRIAL AREA PROGRAMS AND INVESTIGATIONS

Information, data, and results from other programs and investigations were used to develop analytical rationale and sampling locations. An overview of the programs and investigations considered is provided below:

- Data collected for the National Pollutant Discharge Elimination System (NPDES) permit monitoring to characterize surface-water quality during runoff and high-flow events were used to support analytical rationale.
- Conclusions from event-related programs were used to support analytical rationale.
- Results from the 750 Pad, 750 Culvert, and 904 Pad monitoring program were also used to support analytical rationale.
- Surface-water sampling results from the OU2 investigation, which includes the 903 Pad and Mound Areas, were incorporated into the FSP in support of sampling rationale.
- Sampling locations for surface-water and sediments samples proposed for the OU13 RFETS 100 Area, Phase I, Stage 1, RFI/RI were included in this FSP. Data from

this sampling event will be retrieved and included with the samples collected under this FSP.

- The Phase I, Stage 1, RFI/RI for OU12 included the collection of surface-water and sediment samples. The locations of these samples are not included in this FSP. The results of these samples will be used in report development.
- The OU8 Phase I, Stage 1, RFI/RI included data compilation and subsequent sampling of building sumps and footing drains. The conclusions associated with these activities are incorporated in this FSP to avoid overlap between OU8 activities.

These programs and investigations are discussed in more detail in Sections 2.0 and 3.0.

Other Industrial Area activities considered included the Interim Measures/Interim Remedial Action (IM/IRA) for the Industrial Area and the OU4 (Solar Ponds) investigation concerning Bowman's Pond. These programs will not directly impact the sample location selection or rationale for this FSP. However, the work specified in this FSP and subsequent results may be useful in establishing baseline conditions for air, surface water, and groundwater for decontamination and decommissioning verification monitoring detailed in the Industrial Area IM/IRA/Decision Document (DD). Sampling at Bowman's Pond is considered a separate investigation and was not addressed in this FSP.

In addition to the preceding programs and investigations, results from the Site-Wide Surface-Water and Sediment Geochemical Characterization Program were incorporated into this FSP and were used to support sample location selection and analytical rationale. This program is discussed in detail in Section 2.0.

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As previously mentioned, this FSP is being developed under the Phase I, Stage I RFI/RI for the IOU. Media sampling is part of a comprehensive, multistage program of site characterization, feasibility studies, and remedial/corrective actions currently in progress at RFETS. These activities are being conducted pursuant to an IAG among the DOE, the U.S. Environmental Protection Agency (EPA), and the State of Colorado Department of Health (now known as the Colorado Department of Public Health and Environment [CDPHE]) dated January 22, 1991 (DOE et al. 1991). The IAG program developed by these agencies addresses both RCRA and CERCLA requirements.

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2.0 PREVIOUS STUDIES AND INVESTIGATIONS

The objective of this section is to review historical surface-water and sediment data collected at RFETS. The purpose of this review was to identify existing surface-water and sediment data collected within or near the Industrial Area. These data will assist in scoping the current sampling program by identifying potential areas of concern and identifying relevant high-quality data that can be used to support subsequent decision making in the IOU in lieu of collecting additional samples.

Surface-water and sediment data for the Industrial Area are relatively limited because surface-water and sediment monitoring at RFETS has historically focused on and continues to focus on compliance with regulatory requirements and IAG. Historically, the majority of sampling has occurred at the drainage ponds, which were sampled in support of the application for a NPDES permit (1974 to 1992). Currently, most surface-water and sediment sampling occurs in individual OUs and at the drainage ponds. RFETS has conducted several nonregulatory-driven programs, which were designed to characterize background and site-wide surface-water (including stormwater) and sediment quality and to research specific aspects of contaminant transport. Data applicable to meeting the objectives of this FSP were extracted from the Rocky Flats Environmental Database System (RFEDS).

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For the purpose of this data review, more than 30 major surface-water documents were reviewed and evaluated for their pertinence to this FSP. In general, documents reviewed included background geochemical characterization reports, baseflow and stormwater characterization reports, innovative and/or experimental monitoring programs, OU-related monitoring programs, and regulatory monitoring programs. After review of these documents, several were selected for more intensive scrutiny because of their data quality and proximity of sampling points to the Industrial Area. In addition to reviewing documents, interviews were conducted with a number of EG&G Rocky Flats, Inc. (EG&G) staff from both the Surface Water and Environmental Restoration Divisions. The data obtained from these sources are discussed in the following sections.

A number of ongoing investigations will be addressed in Section 3.0, Existing Monitoring and Investigation Programs. Included among these are the following:

- OU2 IM/IRA Project;
- OU8 Footing Drains Survey; and
- RFETS Quarterly Monitoring Program.

These investigations have produced data that were reviewed to technically evaluate the sampling locations.

2.1 SITE-WIDE SURFACE-WATER AND SEDIMENT GEOCHEMICAL CHARACTERIZATION PROGRAM

Monitoring at approximately 116 surface-water locations and 47 sediment locations was initiated in 1989 at RFETS as part of a site-wide characterization program that also supported specific regulatory requirements of the IAG. The IAG monitoring points in the vicinity of the Industrial Area are plotted in Figure 2-1. Beginning in 1989, the site-wide

characterization program sampled 73 surface-water monitoring locations on a monthly basis and 25 sediment locations on a biannual basis (EG&G 1992b). By 1992, the program had evolved into sampling 82 surface-water stations and 25 sediment stations on a quarterly basis (EG&G 1992c). Samples were analyzed for metals, radionuclides, volatile organic compounds (VOCs), oil and grease, and water-quality parameters. Of the 25 sediment sampling locations included in the program, only 15 are in the Industrial Area or immediately downstream of the Industrial Area. The site-wide characterization program for surface water and sediment was essentially eliminated in 1992 and was replaced with sediment or surface-water monitoring in response to specific regulatory needs.

The objectives of the 1989 and 1990 sampling and analysis programs were to compare concentrations of constituents of concern with background upper tolerance limits (UTLs). Mean concentrations of each constituent from each geographical sampling area were compared to background UTLs for the purpose of identifying areas of elevated concentration. The background UTLs were calculated as the 99 percent background sample concentration with 99 percent confidence (EG&G 1993a).

Major conclusions of each year's findings and application of findings to the Industrial Area are provided below. Because the reports did not focus on sediment quality, sediment results were retrieved from RFEDS and are discussed separately in Section 2.2.

2.1.1 1989 Surface-Water and Sediment Characterization Report

During the 1989 characterization program, 73 surface-water locations and 25 sediment locations were sampled. Of these, 25 surface-water locations are of particular relevance to the Industrial Area: 903 Pad Area (SW050, SW053, SW055, SW058, SW065, and SW077), the Solar Ponds Area (SW084 to SW090, SW092 to SW095, SW105, and SW106), and

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Upper South Walnut Creek (SW022, SW023, SW056, SW060, SW061/SED011, and SW101) (EG&G 1992b).

Analytical data collected during this investigation in the vicinity of the Industrial Area are presented in Table 2-1. Several of the analytes including nitrate, carbon tetrachloride, and trichloroethene exceeded stream standards. Because all of the radiochemical analytical data were rejected during data validation, no conclusions can be drawn concerning their distributions (EG&G 1992b).

2.1.2 1990 Surface-Water and Sediment Characterization Report

The major emphasis of the 1990 characterization program was the identification of trends and processes affecting the nature and extent of contaminants in surface-water and sediment. Surface-water data used in the report were retrieved from RFEDS for 98 surface-water locations and approximately 25 sediment locations (EG&G 1992d).

The only organic constituents examined in this report were trichloroethylene (TCE), carbon tetrachloride, and toluene. These constituents were selected because they were widely used in past operations at the former Rocky Flats Plant, now known as RFETS. For example, toluene was investigated because it was believed to be a major component of soil binders sprayed to inhibit soil erosion and transport (EG&G 1992d).

Organic contaminants were found in selected bottom sediment samples, but the number of sediment samples acquired in 1990 were too few to be statistically analyzed. Box plots of TCE and carbon tetrachloride showed that they were generally present in surface-water in very low concentrations. The maximum concentrations of TCE and carbon tetrachloride for 1990 were in the OU2 area (SW050, SW055, SW056, SW059, SW060, SW061, and

SW064) located within the Industrial Area boundaries or along the southeastern boundary of the Industrial Area plateau. The sample with the maximum TCE concentration of 200 micrograms per liter ($\mu\text{g/L}$) was observed at SW059, which is located in the Mound Area. Overall, organic compound contamination in RFETS surface waters appeared to be limited to seeps. For the Industrial Area, these contaminated seeps appear to be confined to the 903 Pad and Lip Area (SW050, SW055, and SW064) and the Mound Area (SW056, SW059, SW060, and SW061) of OU2 (EG&G 1992d).

Radionuclide characterization involved evaluating activities of gross alpha, gross beta, uranium-235, -236, plutonium-239, -240, and americium-241. The Solar Ponds Area surface-water samples (SW087 to SW090, and SW105) exhibited higher gross alpha and gross beta activity than the other RFETS surface waters. The maximum gross alpha activity of 1,750 picocuries per liter (pCi/L) was located at SW090 in the Solar Ponds Area. In general, the samples taken in the Solar Ponds Area were from sumps and seeps draining the colluvium near the Solar Ponds. The Solar Ponds Area also showed elevated uranium-235, -236 activities. Radionuclide activities were low in samples collected from the South Walnut Creek drainage at locations SW092 and SW093 (900 and 1,600 feet, respectively, downgradient from the Solar Ponds). Because radiochemical data were not measured at many sampling locations, only conclusions concerning contamination in the vicinity of the Solar Ponds were discussed in the 1990 report (EG&G 1992d).

2.1.3 1989 and 1990 Conclusions

Based on the data collected and evaluated in the 1989 and 1990 Surface Water and Sediment Geochemical Characterization Reports (EG&G 1992b,d), areas of surface-water contamination within the Industrial Area include the Solar Ponds Area (OU4), the 903 Pad Area (OU2), and Upper South Walnut Creek near the northeastern boundary of the Industrial Area (Mound Area, OU2). In the Solar Ponds Area, constituents in excess of background

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UTLs included specific conductivity, pH, chloride, sulfate, nitrite/nitrate, various metals, and a variety of radionuclides. In the 903 Pad Area, radionuclides and a few metals occurred above background. In the Upper South Walnut Creek Area, metals and plutonium, concentrations were elevated. Radionuclides and organic constituents of concern in these areas are shown in Table 2-2. In most cases, the highest levels of contamination were found in seeps and sumps.

The *Surface Water and Sediment Geochemical Reports* had limited data for the western and south-central portion of the Industrial Area. In addition, efforts to backtrack water quality in the upper South Interceptor Ditch (SID) to sources in the western Industrial Area were not successful because of limited data. According to the 1989 report (EG&G 1992b), it is possible that Individual Hazardous Substance Sites (IHSSs) in the western Industrial Area may contribute to elevated concentrations of sulfate, radionuclides, and some metals in the upper SID. The 1990 report (EG&G 1992d) noted gross alpha; gross beta; plutonium-239, -240; uranium; nitrite/nitrate; and total suspended solids (TSS) elevated above background. However, because the data were from the old landfill, the 881 Hillside Area, and the americium zone outside the Industrial Area, potential sources of contamination within the western and south central Industrial Area could not be identified.

Neither the 1989 nor the 1990 report discussed results of sediment sampling near the boundary of the Industrial Area. The 1990 report stated that sediment data collected during 1990 were insufficient to conduct statistical analyses. Consequently, the report contained no conclusions or data for sediments.

2.1.4 RFEDS Sediment Summary

Historical analytical data were extracted from RFEDS to characterize and assess the distribution of contamination previously detected and to identify gaps in the database. Data

TABLE 2-2

**OUI2 Field Sampling Plan
Primary Organic and Radionuclide Constituents of Concern
in the Industrial Area Identified in the 1989 and 1990
Surface-Water and Sediment Geochemical Reports**

Constituents of Concern	Solar Ponds	903 Pad	Upper South Walnut Creek (Mound Area)
ORGANICS			
Acetone	X		X
Bis [2-Ethylhexyl]-Phthalate	X		
Carbon Tetrachloride	XX	XX	XX
Chloroform	X	X	X
1,2-Dichloroethylene	X	XX	
Methylene Chloride	X		X
Tetrachlorethene		X	XX
Trichloroethylene		XX	XX
Polychlorinated Biphenyls (Aroclor-1254)	X		
RADIONUCLIDES			
Americium-241	XX	XX	
Gross Alpha	XX	XX	XX
Gross Beta	XX	XX	XX
Plutonium-239	XX	XX	
Tritium	XX		
Uranium-233,234	XX		
Uranium-235, 236	XX		
Uranium-238	XX		
Total Uranium	XX		

Notes: X = contaminant detected at individual monitoring location, but not widespread
XX = widespread contaminant

Data gaps are sample necessary to meet the DQOs that either were never collected or if collected were of a quality that would not allow their use for specified purposes. Data gaps and DQOs that apply to this FSP were discussed in Section 1.0. Examples include the following: (1) data of low quality level (I or II) cannot be used in risk assessments, (2) locations where sediments were never sampled, or (3) locations that were sampled but were analyzed for very few constituents.

Surface-water and sediment data were retrieved for 1991 through 1993, which represent the most recent data that are fully validated. During this period, data were collected at 48 surface-water and 16 sediment sampling locations in and downgradient from the Industrial Area as part of the Site-Wide Characterization Program. A table presenting the detected analytes for these sampling locations is included as Appendix A. Descriptions of the sampling stations are provided in Table 2-3.

A variety of organic compounds were detected at each location in addition to metals, other inorganics, and radionuclides in excess of the background UTLs for sediments. Summaries of compounds detected in excess of background UTLs by sediment sampling station are contained in Table 2-4. For metals, radionuclides, and inorganics at each sample station, the 85th percentile concentration for the sample population was calculated and compared to background UTLs. Table 2-4 is a summary of these comparisons. The northern portion of the Industrial Area had more exceedances for toxic metals, radionuclides, and nitrate/nitrite than did the southern portion of the Industrial Area (SID). Zinc was the metal most commonly exceeding UTLs in each area. In addition to radionuclides and organics, organic compounds were widespread at all sediment sampling locations. In particular, the presence of VOCs, semivolatile organic compounds (SVOCs), pesticides, and polychlorinated biphenyls (PCBs), were noted.

TABLE 2-3
OU12 Field Sampling Plan
Description of Sediment Sampling Locations
Near the Industrial Area
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Location	Sediment Station ¹	Description
Northern portion of Industrial Area (Tributary to North Walnut Creek)	SED010 (SW018)	Stream ponded with water. Located west of Building 771, west of road. Width: 3 to 4 feet, depth: 1 inch, length: 6 inches. Discharge unmeasurable. Also has cut banks.
	SED120 (SW120)	Ditch located north of Solar Evaporation Ponds, south of the perimeter road, 30 feet below the Interceptor Trench System. Flows into 1-foot concrete pipe. Ditch parallels road and is usually dry.
	SED124 (SW124)	Located east of Building 771 just upstream from SED120. Ditch fed by 3 culverts. Width: 2 to 4 feet, depth: 0.5 to 3 inches. Slow velocity with unmeasurable discharge.
North Walnut Creek	SED009 (SW017)	Located to the north of the Solar Evaporation Ponds and about 110 feet downstream of SW093 in North Walnut Creek. Width: 1 to 4 feet, depth: 1 to 4 inches. Slow velocity with unmeasurable discharge.
	SED117 (SW117)	Located north and just a little west of Building 371 at northeast perimeter of Industrial Area. Ditch with ponded water. Width: 2 to 5 feet, depth: 0.5 to 2.5 inches. Water is stagnant and discharge is unmeasurable.
	SED118 (SW118)	Located northwest of Building 771, just downstream of SED117. Width: 6 inches to 3 feet, depth: 1 to 2 inches. Cloudy, stagnant water and very low flow.
South Walnut Creek in Industrial Area	SED012 (SW023)	Located east of Building 995 just upstream of SED12 at influent to Pond B-1 headgates. Stream has clear water with a slow velocity.
	SED011 (SW061)	Located southwest of Building 988. Stream width: 3 to 4 feet, depth: 2 to 4 inches. Clear water with slow velocity and less than 0.01 cubic feet per second discharge.

TABLE 2-3
Description of Sediment Sampling Locations
Near the Industrial Area
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Location	Sediment Station ¹	Description
South Interceptor Ditch	SED028 (SW030)	Located southeast of Building 881 in the South Interceptor Ditch. Ditch with no water but bed is damp. Site is frequently dry.
	SED037 (SW035)	Located south of 850 Parking Lot. Ponded water in South Interceptor Ditch. Width: 10 feet, depth: 8 inches. Cloudy water with a stagnant velocity.
	SED029 (SW054)	Located west of 881 Hillside. Ditch with a width of 15 to 20 feet and depth of 4 to 6 inches. Clear stagnant water with no discharge.
	SED039 (SW070)	Located east (upstream) of SED028. A ditch with ponded water that has a width of 16 to 20 feet, depth up to 4 feet, and a length of 40 feet.
	SED126 (SW126)	Located southwest of Building 881. This narrow channel has been highly eroded. The source of water may be upgradient seep. Site usually dry.
881 Hillside (OU1)	SED038 (SW057)	Located to the east of Building 881 and about 60 feet north of road on hillside. Site is a depression on hillside and is fed by seep. Site is dry except for winter.
	SED125 (SW125)	Located east of Building 881. Site is adjacent to road and is usually dry. Body of water created by influent from 12-inch culvert.

¹ Number in parenthesis represents the surface-water stations that correspond to the sediment stations.

TABLE 2-4
OU12 Field Sampling Plan
Summary of Analytes Exceeding Background Upper Tolerance Limits in Sediment Samples

	North Walnut Creek			South Walnut Creek	South Interceptor Ditch					881 Hillside		Northern portion of IA	
	SED009	SED117	SED118	SED011	SED028	SED029	SED037	SED039	SED126	SED038	SED125	SED120	SED124
Metals													
Barium							X						
Cadmium													X
Calcium				X	X	X		X					
Chromium													X
Copper								X					X
Magnesium								X					
Nickel							X						
Silicon			X		X				X				
Sodium								X				X	
Zinc	X	X		X			X	X			X		X
Radionuclides													
Gross Alpha				X				X					
Gross Beta											X	X	
Plutonium-239, -240								X					
Radium-226													X
Strontium-89, -90						X						X	
Tritium													X
Inorganics													
Nitrate/Nitrite												X	

Notes: IA = Industrial Area
 UTL = Upper Tolerance Limit
 X = 85th percentile > UTL

2.2 STORMWATER NPDES PERMIT APPLICATION MONITORING

The Stormwater NPDES Permit Application Monitoring Program for RFETS was conducted by EG&G Rocky Flats, Inc. in 1992. The goal of the program was to characterize surface-water quality during runoff or high-flow events (EG&G 1993b). The program included collection and analysis of stormwater samples from six stations that capture the majority of runoff (including footing drain discharges) from the Industrial Area. Sampling locations included in the program were SW022, SW023, SW027, SW093, SW118, and SW998 (Figure 2-1). Chemical analyses were performed for selected trace metals, anions, and nutrient species.

The results of this study are presented in the *Stormwater NPDES Permit - Application Monitoring Program, Rocky Flats Plant Site* (EG&G 1993b). Table 2-5 summarizes the hydrograph-integrated stormwater quality data to provide an integrated water quality characterization for multiple storm events during November 1991 through August 1992. Data in this table include maximum and average concentrations for each analyte at different locations. If an analyte was not detected in a sample, one-half the detection limit was used to calculate the average. The metals reported are total recoverable metal concentrations.

Metals having the highest total concentrations in the storm-runoff samples were consistently aluminum and iron. Anion and nutrient species concentrations at all sites were determined to be at acceptable levels for storm runoff. Only one storm event was successfully sampled for organics because of the timing of the storm events and the standard sampling methods that necessitate manual "grab" samples. These data were not included in the report, although they were included in the permit application. Organics were not detected at detection limits greater than 50 µg/L (DOE 1992a).

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A review of Table 2-5 does not indicate large differences between the quality of water from sampling areas where all or a majority of the drainage is from the Industrial Area (SW022, SW023, and SW093) compared with sampling areas where only a portion of the drainage is from the Industrial Area (SW027, SW118, and SW098). For metals known to be processed at RFETS (e.g., beryllium) mean concentrations at the station upgradient from the Industrial Area (SW098) were slightly lower than stations receiving runoff from the Industrial Area.

2.3 EVENT-RELATED MONITORING PROGRAMS

The event-related surface-water monitoring program is described in the *Event-Related Surface-Water Monitoring Report: Water Years 1991-1992* (EG&G 1993c). The purpose of this program is to present available data for the RFETS gaging-station network in a series of reports, the next of which is scheduled for release in October 1994. This network serves as the long-term, fixed-station, surface-water monitoring network for the site. The network will be used to support Clean Water Act compliance and monitor for RCRA/CERCLA objectives. The report includes the following:

- annual hydrographs of mean daily discharge for 12 RFETS gaging stations;
- total radionuclide activity and total mean concentration and loading data for selected storm events;
- suspended sediment concentration data;
- annual RFETS precipitation hydrographs;

- interpretation of metal and radionuclide loading in drainages; and
- information about the history and development of the Event-Related Surface-Water Monitoring Program.

The key conclusions from the *Event-Related Surface-Water Monitoring Report* are listed in the following paragraphs (EG&G 1993c).

1. Total metal and radionuclide loads in Walnut Creek appeared to be higher than overall constituent loads in other RFETS drainages because of runoff from impervious areas within the Industrial Area. Because of limited data, this conclusion was made without statistical verification.
2. Plutonium-239,-240 activity increased in unfiltered samples with increasing aluminum and iron concentrations in the Walnut Creek drainage, indicating that the plutonium may be associated with iron-coated or iron-containing aluminosilicates in suspended sediment.
3. Uranium-238 activity and major cation concentrations decreased with increasing stream discharge at station GS13 on North Walnut Creek. This was interpreted as indicating dilution of these naturally occurring constituents. Trace metal concentrations increased with increasing stream discharge at GS13. This conclusion indicated the flushing of metals from impervious portions of the Industrial Area or from wetland areas that had attenuated the metals.
4. Americium-241 activity decreased with increasing stream discharge at station GS10 in South Walnut Creek, indicating dilution of an americium-241 source. Samples were collected for total americium-241 analysis.

5. Pesticides and SVOCs were monitored during two storm events. No compounds were detected at detection limits ranging from 10 to 50 $\mu\text{g/L}$.

Of particular relevance to the Industrial Area are gaging stations GS10 and GS13, which capture stormwater immediately downstream of the Industrial Area. GS13 captures runoff directly from the northeast corner of the Industrial Area and also receives upstream flow from North Walnut Creek. GS10, located at the eastern boundary of the Industrial Area, receives drainage from a large portion of the southern part of the Industrial Area. Table 2-6 contains a summary of data collected at stations GS10 and GS13, including the reported 1991 and 1992 data, as well as data available but not currently published in a periodic report summary. The following observations are based on the Table 2-6 data:

1. GS10 showed relatively frequent exceedances of Segment 5 stream standards for americium-241 and plutonium-239 and a few exceedances for gross alpha, gross beta, and uranium-233. Frequent exceedances of dissolved cadmium, lead, mercury, and silver standards were also noted with a few exceedances of copper, iron, and zinc standards. For total metals, arsenic, copper, lead, selenium, and zinc, standards were frequently exceeded; and some exceedances of iron and manganese standards were noted. Water quality parameters tested were within the stream standards.
2. Americium-241 and plutonium-239 activities were in excess of the stream standards at GS13 in slightly less than half of the samples taken. For dissolved metals, cadmium, lead, and silver exceeded stream standards. For total metals, frequent exceedances of arsenic, lead, and selenium standards were noted; and some samples contained high copper and iron. All water-quality parameters tested were within standards.

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3. Statistical analyses using a paired t-test of mean radionuclide concentrations at GS10 and GS13 determined that only uranium-238 had significantly different mean concentrations between stations. A higher mean concentration of uranium-238 was identified at GS13; however, this mean concentration did not exceed Segment 5 stream standards.

The purpose of the program as stated in the *Event-Related Surface-Water Monitoring Report* (EG&G 1993c) does not explicitly include collecting data to support a human-health risk assessment. Therefore, these data can only be used as an indicator of water quality.

2.4 750 PAD, 750 CULVERT, AND 904 PAD MONITORING

According to the OU10 *Phase I RFI/RI Work Plan* (EG&G 1992e), the 750 Pad was initially constructed as a parking lot for Building 750. Currently, the 750 Pad is used for the storage of pondcrete and saltcrete. Pondcrete is a low-level mixed waste resulting from the solidification of Solar Pond sludge or sediment with portland cement. Saltcrete consists of solidified low-level radioactive and hazardous waste extracted from liquid process waste from the Building 374 evaporator. The pad is bermed to control runoff and run-on. Surface-water is directed around the north side of the pad and exits through a culvert located on the east side of the pad. The 750 Pad remediation is included as part of the long-term activities for OU10.

Beginning in 1986, stormwater puddles on the 750 Pad and the 750 Culvert were sampled. Between 1986 and 1989, spills of pondcrete to the asphalt had occurred. The spills totaled 0.5 cubic feet. Past routine inspections have identified leaking and deformed pondcrete containers (EG&G 1992f).

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Gross alpha and gross beta analyses of soil samples collected in the area indicate the presence of radionuclide contamination. Analyses of surface-water samples indicate the presence of radionuclide, nitrate, cyanide, and cadmium contamination. Metals and other inorganics were also detected in the surface-water samples. From approximately 1989 to 1993, runoff from the 750 Pad was sampled after every precipitation event and analyzed for gross alpha and gross beta, nitrate, cyanide, metals, total dissolved solids (TDS), ammonia, target compound list (TCL) VOCs, and mercury. Surface water at the 750 Culvert was monitored weekly for gross alpha and gross beta, TDS, and nitrate. Recently, monitoring has been reduced to twice per year for the pads and has been eliminated at the 750 Culvert (EG&G 1994a).

In 1992, EG&G's Surface Water Division conducted a study that compared data from 750/904 Pad runoff with RFETS stormwater data (EG&G 1992f). The purpose of the study was to evaluate the need for continued collection of the stormwater from the pads and subsequent treatment at Building 374. The study involved comparing samples collected at the 750 and 904 Pads to stormwater samples collected at SW022 and SW023 and samples collected at the Pond A-4 discharge to Walnut Creek. The samples collected at the pads were from puddles. All data used in the study were limited to 1991 data to simplify the comparison. The results of the comparisons generally showed lower levels of contaminants in water collected on the pads than those at stormwater sampling locations. Nitrate concentrations and gross beta activities from the pads were comparable to stormwaters throughout RFETS; however, the gross alpha measurements were generally higher for approximately half of the storm events evaluated. Cadmium, chromium, arsenic, and mercury were detected in the pad puddle samples, along with methylene chloride, toluene, acetone, and chloroform (EG&G 1992f).

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The historical purpose of the program does not explicitly include collecting data to support a human-health risk assessment; therefore, the data collected for this program do not meet the DQOs for this project and can only be used as an indicator of water quality.

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Approved By:

William H. Hays Jr. 1/25/95
Director (Date)

Suzanne Berman Smith 1/24/95
Project Manager (Date)

Steve Tucker 1/26/95
Quality Assurance Program Manager (Date)

3.0 EXISTING MONITORING AND INVESTIGATION PROGRAMS

As discussed in Section 2.0, available data sources were reviewed to compile information to support the proposed surface-water and sediment sampling program. The following sections describe existing programs that currently monitor surface water and sediments at RFETS.

3.1 SURFACE-WATER AND SEDIMENT MONITORING PROGRAMS

The RFETS surface-water and sediment monitoring programs consist of compliance, operational, and characterization monitoring programs. The EG&G Surface Water Division is working toward development of a permanent, automated, fixed-station monitoring network to collect information for regulatory compliance and overall RFETS surface-water management. During 1989 and 1990, surface-water and sediment monitoring programs were expanded to respond to data-collection needs for CERCLA, RCRA, DOE Order, and Best Management Practice requirements. Currently, compliance monitoring is conducted in response to NPDES, Agreement in Principle (AIP), and DOE operational monitoring requirements. Building-sump and foundation-drain sampling programs are also ongoing (EG&G 1993d).

Analytical results are available for previous surface-water and sediment samples collected as part of the compliance and operational monitoring programs. Because of the volume of surface-water and sediment results available, selected data are summarized in Appendices A and B.

3.2 OU2 SURFACE-WATER AND SEDIMENT SAMPLING

A surface-water IM/IRA, which includes the 903 Pad and Mound Area, is being implemented at OU2 and is based in part on the data collected during the 1989 and 1990 surface-water and sediment geochemical characterization program. This IM/IRA treats surface-water contamination consisting primarily of TCE, tetrachloroethylene (PCE), carbon tetrachloride, and associated degradation products. Several metals, uranium, and other inorganic constituents were also noted to be at levels above background in individual environmental media, but no strong conclusions were drawn with regard to the source of these contaminants.

Samples collected in the South Walnut Creek basin as part of the OU2 investigation (stations SW056, SW059, SW060, SW061, and SW101) showed carbon tetrachloride, TCE, and PCE concentrations in excess of 200 $\mu\text{g/L}$, with lower and infrequent concentrations of 1,1-dichloroethene, 1,1-dichloroethane, 1,2-dichloroethene, vinyl chloride, acetone, bromodichloromethane, and methylene chloride. These stations also frequently showed high surface-water concentrations for uranium. Seeps in the vicinity of the 903 Pad Lip (SW050, SW053, and SW054) had detectable plutonium and/or americium during one or more 1989 sampling events. The source of these radionuclides was hypothesized to be contaminated soils (DOE 1992b; EG&G 1991a). These conclusions are consistent with those in the 1989 and 1990 Geochemical Characterization Reports.

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Under the IM/IRA for OU2, surface-water from locations SW059, SW061, and SW132 was originally collected for treatment. SW059 is a seep, SW061 is located at the outlet of a concrete culvert, and SW132 is located at a buried corrugated metal culvert approximately 225 feet downgradient of SW061. The SW132 culvert was identified as a conduit for flow from the upper reach of South Walnut Creek from within the Protected Area. The surface water at these locations was collected upstream of the B-series ponds to reduce the potential for downstream contamination. The combined flows from the three locations were approximately 15.2 gallons per minute most of the year (DOE 1992a). Currently, only the seep at SW059 is being collected for treatment of flows ranging from 0.5 to 1 gallon per minute. Surface waters from the other two locations are no longer being collected because treatment of those waters was deemed unnecessary because the low levels of contaminants were not further reduced by treatment (DOE 1993).

3.3 OU13 SEDIMENT SAMPLING

Surface-water and sediment sampling locations for IHSSs in OU13 are described in the final OU13 Technical Memorandum No. 1 (EG&G 1994b). The purpose of this document was to compile the results of visual inspections conducted to evaluate possible hazards and overhead utilities at each IHSS and to delineate paved and unpaved areas to identify potential sampling locations.

Representatives of DOE and EG&G performed a site reconnaissance of ditches within or adjacent to the OU13 IHSSs to identify sediment and surface-water sampling locations. The ditches within OU13 include the Central Avenue Ditch and the tributaries to Walnut Creek as they flow through the Industrial Area. During the site reconnaissance, accumulations of sediment were observed in areas where ditches converge and standing water collects. Sampling locations were identified (1) at wide spots where flow velocities tend to decrease, (2) at areas where silt accumulation has been noted, (3) upstream of culverts, and (4)

downgradient of abrupt grade transitions where settling is likely to occur. Samples will be collected upstream and downstream of confluences where water and sediments can be transported from other IHSSs within the Industrial Area. A total of 26 sediment samples will be collected from the ditches and other surface-water features in or adjacent to IHSSs in OU13. Additionally, as many as 10 surface-water grab samples may be collected concurrently, if standing water is observed (EG&G 1994b). Sampling locations are shown in Figure 15 in the OU13 Technical Memorandum (EG&G 1994b). When sample results are available, they will be used to support the OU12 surface-water and sediment sampling program. Although samples have not been collected to date, a discussion of the OU13 sediment sampling locations has been included in the sampling rationale presented in Section 4.0 of this OU12 FSP.

3.4 OU12 SEDIMENT SAMPLING

The objectives of the OU12 RFI/RI field investigation, as presented in the *Final RFI/RI Work Plan* for OU12 (EG&G 1992a), are to (1) characterize the nature and extent of contamination at each IHSS in OU12, (2) support health risk assessment and environmental evaluation, and (3) support corrective measures studies, feasibility studies, and treatability studies. The purpose of the proposed OU12 sediment sampling is to investigate the potential presence or absence of surficial contaminants in sediments and surface-water runoff. Drainage paths identified at specific IHSSs were also proposed for sampling to determine whether compounds have migrated from the site to drainage ditches via surface-water runoff. At IHSSs where historical information indicates runoff may have occurred, sediment samples were proposed for collection and analysis for suspected compounds including TCL VOCs, target analyte list (TAL) metals, radionuclides, and PCBs (EG&G 1992a).

3.5 BUILDING SUMPS AND FOOTING DRAINS

Information about the building sumps and footing drains at RFETS is compiled in *Technical Memorandum No. 1* for OU8 (EG&G 1994c). The building sumps and foundation drains have been sampled since 1977, and this sampling program is a voluntary effort at RFETS to characterize incidental waters and footing drains. The sample results are not subject to regulatory standards and are not generally of sufficient quality to support a quantitative human health risk assessment. The following subsections summarize the information presented in the OU8 Technical Memorandum.

3.5.1 Locations

The OU8 Technical Memorandum (EG&G 1994c) provides a detailed, building-by-building description of each foundation-drain system that has been identified within the Industrial Area. This information was compiled by conducting a building-by-building survey. The following paragraphs describing the foundation-drain locations were summarized from the OU8 Technical Memorandum (EG&G 1994c).

- 111 The current sampling location (BS-111-2) is a sump in the south end of the Building 111 basement. The station currently is not sampled because the outfall is normally dry.
- 124 The foundation drain for this building was located around the exterior of the foundation. This drain has never been sampled.

- 371/374** The foundation drains for these buildings are located around the perimeter and
517/518 beneath the foundations. Foundation-drain water discharges at six outfalls,
three for each building complex. Samples currently are collected from one
of these foundation drains at Station FD-371-3.
- 440** No foundation drains were determined to exist for this building.
- 444** The foundation drain for this building drains the southern end of the basement
and leads to a sump. The foundation drains for Building 444 have never been
sampled.
- 447** A foundation drain exists on the western half of the basement foundation and
joins a storm drain that runs north and south underneath the building. This
water discharges to an outfall to the south of Building 664 that is currently
being sampled.
- 559** No foundation drain was found for Building 559; however, there is a drain for
the tunnel that connects Building 559 to 561. Currently, the water is pumped
from the sump to the sanitary sewer system. Both the sump (FD-559-561)
and the outfall (FD-561-1) have been sampled but are not currently being
sampled.
- 707** Foundation drains exist under Building 707 and tie into the storm sewer
system at the southwest corner of the building. Sampling is currently
conducted at BS-707-2, a vault next to the cooling tower south of the
building.

- 771 The foundation-drain system for this building has three discharge locations on the northwest side of the building. The first is a pipe that discharges to Manhole No. 3 near the northwest corner of the building. This manhole is connected to the storm sewer, which discharges to a small pond on the north side of Building 774. The second outfall is located on the west side of Building 771, and it discharges to the ground surface. The third and last outfall discharges to the storm sewer near the western addition and is currently sampled as FD-771-1.
- 774 Foundation drains located around the perimeter of this building drain to three outfalls. The first outfall discharges from a storm drain and flows into a small pond north of the building and then into North Walnut Creek, or possibly the OU4 Interceptor Trench System (ITS). The second outfall also discharges to the pond. However, because of recent construction, this drain has likely been blocked. The last outfall discharges through a storm drain located on the hillside northeast of the building. The first outfall (FD-774-1) is the only one that has been sampled.
- 779 A foundation drain was constructed for the addition of this building. The drain is connected to a storm drain that discharges to the hillside north of the Solar Ponds. Sampling is currently conducted at FD-779-1, an outfall north of the Solar Ponds.
- 850 The foundation drains for this building discharge to an outfall on the hillside south of the building. This outfall was selected for sampling in the past; however, it is often dry and is not part of the current sampling program.

- 865** Foundation drains for Building 865 flow to a sump on the west side of the building. The sump (BS-865-1) is sampled under the current program.
- 881** This building has three separate foundation/underdrain systems that discharge to different locations. The first is a foundation-drain system that runs around the perimeter of Buildings 881 and 887. The second system collects roof drain water and ties into a subbasement storm drain system. The third discharge is from the utility tunnel network and floor drains, which discharge to a sump in the boiler room near the south end of the building. The first and third discharges have been historically sampled.
- 883** The foundation-drain system discharges to a sump at the southwest corner of the building. The sump is currently sampled as FD-883-1, but the outfall has never been sampled.
- 887** The foundation-drain system for this building is connected to Building 881.
- 910** The drain system for this building collects at a sump and discharges to the ground surface northeast of the building. This sump is currently sampled as FD-910.
- 991/998** These two buildings are connected by a tunnel that has a foundation-drain system. These drains flow toward the east and historically discharged to a ditch on the eastern side of Building 991. This outfall has been sampled in the past but can no longer be located.

995 Drains from this facility likely discharge to three outfalls south of the facility. However, these drains were sludge bed underdrains that may not have existed or may have been altered by the relining of the sludge beds. None of these outfalls has been sampled.

996, 997 Foundation drains for these structures are believed to be connected to a storm
999 sewer east of Building 991. These drains have not been sampled.

3.5.2 Sampling and Data Analysis Plan

Table 3-1 summarizes the recommended sampling and analysis program for foundation drains in the OU8 IHSSs summarized from the OU8 Technical Memorandum (EG&G 1994c).

3.6 SOILS MONITORING PROGRAM

Currently, RFETS has no existing routine soils monitoring program. A significant number of soil samples have been collected from locations within the Industrial Area as part of various characterization tasks; however, these tasks required soil samples from unique locations specific to the objective of each field investigation. These soil sample results were determined to be not applicable to the proposed surface-water and sediment sampling program.

TABLE 3-1
OU12 Field Sampling Plan
Summary of Recommended Foundation Drain Sampling
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BUILDING	CURRENT SAMPLING STATION	RECOMMENDED SAMPLING (Current Sample No.)	ANALYTICAL REQUIREMENTS
111	BS-111-2	No sampling recommended	None
124	None	Sample sump east of building (None)	VOCs, SVOCs, Metals, Rads
371/374	FD-371-3	Sample FD-371-2 if flow is observed. Collect sediment samples at FD-371-2 and FD-371-3 (3-10)	Water - VOCs, SVOCs, Metals, Rads Sediment-SVOCs, Rads
	FD-371-MC	No sampling recommended	None
444/447	FD-444-460	No sampling recommended	None
559	None	Collect sediment sample from FD-516-1 (3-22)	SVOCs, Rads
707	FD-707-2	No sampling recommended	None
771	FD-771-1	No sampling recommended	None
774	FD-774-1 FD-774-2	Collect sediment samples at outfalls FD-774-1 and FD 774-2 (3-28)	SVOCs, Rads
779	FD-779-1	No sampling recommended	None
850	None	No sampling recommended	None

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TABLE 3-1
Summary of Recommended Foundation Drain Sampling
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BUILDING	CURRENT SAMPLING STATION	RECOMMENDED SAMPLING (Current Sample No.)	ANALYTICAL REQUIREMENTS
865	BS-865-1 BS-865-2	No sampling recommended	None
886	None	No sampling recommended	None
881	None	Sample FD-881-4, once (5-7)	VOCs, SVOCs, Metals, Rads
883	FD-883-1	No sampling recommended	None
991/998	BS-991-2	No sampling recommended	None
995	None	No sampling recommended	None
996/997/999	None	No sampling recommended	None

Table 3-3 is summarized from information presented in EG&G 1994c. Recommendations are associated with Operable Unit 8. Samples have been incorporated into the Field Sampling Plan rationale.

Notes:

SVOCs = Semivolatile Organic Compounds
 VOCs = Volatile Organic Compounds
 Rads = Radionuclide isotopes
 SWD = EG&G Surface Water Division

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Rocky Flats Environmental Technology Site
Operable Unit No. 12
Technical Memorandum No. 1
Field Sampling Plan

Manual: RFP/ER-94-00048
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4.0 FIELD SAMPLING RATIONALE

Section 4.0 of this technical memorandum discusses the field sampling rationale for surface water and sediments in the Industrial Area. The rationale for selection of sampling sites, sampling methodology, chemicals of concern, and discussions regarding contaminant sources, analytical methods, and fate and transport are presented in this section. Also provided is a general overview of the drainage basins in the Industrial Area and the individual drainage basin characteristics.

4.1 DRAINAGE BASIN OVERVIEW

For the selection of surface-water and sediment sampling locations, distinct surface-water drainages (or pathways) were identified and evaluated within the Industrial Area. These pathways consist of subbasins, which are topographically distinguishable areas that drain to distinct locations. The drainage basins for the Industrial Area are shown on Plate 2.

Major drainage basins within the Industrial Area have subbasins identified in the *Rocky Flats Plant Drainage and Flood Control Master Plan* (EG&G 1992g). The subbasin identification nomenclature used in that report will also be used for this FSP. The *Rocky Flats Plant Drainage and Flood Control Master Plan* (EG&G 1992g) divides the area into six main drainage basins with 29 subbasins. Wright Water Engineers added a seventh basin to define

the area that collects surface water and is tributary to the ITS. Each subbasin was given a designator beginning with "C." The letters following "C" designate the stream to which the basin ultimately drains; "WA" indicates North Walnut Creek, "SWA" indicates South Walnut Creek and "DIV" refers to a diversion (SID or the Walnut Creek Diversion).

The following sections discuss the seven main drainage basins within the Industrial Area and provide a general description of the drainage area and the discharge locations. Each section contains a table that defines the subbasins, the major buildings in the subbasin, drainage area (acres), and the location of the subbasin drainage point.

4.1.1 Drainage Basin 1

This basin includes most of the southern portion of the Industrial Area. Under normal conditions, the basin discharges to the east into the buffer zone and eventually into the B-series ponds. The diversion structure at SW022 diverts the Central Avenue Ditch into South Walnut Creek at Building 995. Most flood waters would flow directly into Pond B-5. Much of the Industrial Area located south of Central Avenue discharges into Drainage Basin 1. The basin has a drainage area of 84 acres that encompasses five main subbasins and 29 major buildings (EG&G 1994d). Table 4-1 details the subbasins, major buildings, drainage area, and drain locations.

4.1.2 Drainage Basin 2

Drainage Basin 2 includes the central and east-central portions of the Industrial Area. The drainage flow is to the east and discharges into the B-series ponds via South Walnut Creek. The basin has 91 acres that encompass five main subbasins and 32 major buildings. Drainage characteristics are detailed in Table 4-2.

TABLE 4-1
OUI2 Field Sampling Plan
Characteristics of Drainage Basin 1

Subbasin	Major Buildings in Subbasin	Drainage Area (acres)	Drains to	Location of Subbasin Drain
CSWAA2	122, 123, 124, 125, 441, 443, 442, 452	13	CSWAA4	A 21-inch CMP located in the northeast corner of subbasin CSWAA2
CSWAA3	439, 440 (northeast), 444, 445, 447 (east), 463, 668	12	CSWAA4	A ditch at the northeast corner of subbasin CSWAA3
CSWAA4	221, 224, 275, 662, 663, 664	16	CSWAA5	An 18-inch CMP culvert location in the northeast corner of subbasin CSWAA4
CSWAA5	865, 866, 883 (north), 884, 886, 888, 889, 880	28	CSWAA6	A 24-inch CMP under Central Ave. located near the northeast corner of subbasin CSWAA5
CSWAA6	NONE	15	CSWAB5	Two culverts, a 30-inch RCP and a 30-inch CMP, drain the northeast corner of CSWAA6 and empty to a channel east of the Industrial Area that drains to Pond B-5

Notes:

CMP = corrugated metal pipe
RCP = reinforced concrete pipe

TABLE 4-2
OU12 Field Sampling Plan
Characteristics of Drainage Basin 2

Subbasin	Major Buildings in Subbasin	Drainage Area (acres)	Drains to	Overflows to	Location of Subbasin Drain
CSWAB1	223, 333 (south), 334 (south), 549, 551 (east), 552, 553, 554, 555, 558	20	CSWAB5		A 72-inch CMP storm sewer located at ponded area at east end of subbasin CSWAB1
CSWAB2	NONE	6	CSWAB3	CSWAB4	A 4-foot by 3-foot elliptical CMP storm sewer located southeast of Building 707, near the middle of subbasin CSWAB2
CSWAB3	559 (southeast), 561 (south), 564, 707, 708, 750, 776 (southeast), 777 (south), 778 (east), 980	31	CSWAB5	CSWAB2	A 60-inch CMP storm sewer located at the eastern end of subbasin CSWAB3
CSWAB4	965, 968, 984, 985, 989, 990, 991, 996	19	CSWAB5		A 54-inch-diameter culvert located at the eastern end of subbasin CSWAB4
CSWAB5	987, 988, 993, 995	15	South Walnut Creek (SW023)		Two culverts, both 30-inch RCP, located at the eastern end of subbasin CSWAB5

Notes:

CMP = corrugated metal pipe

RCP = reinforced concrete pipe

4.1.3 Drainage Basin 3

Drainage Basin 3 drains the northwest portion of the Industrial Area and covers less than 50 percent of the Protected Area. Drainage Basin 3 ultimately discharges into the A-series ponds via Walnut Creek. The water from approximately 6 acres of this drainage basin discharges into the ITS. Drainage Basin 3 is composed of 144 acres and encompasses portions of the Protected Area. Wetland/seep areas are found in the drainage especially near Building 111 and 374 (EG&G 1994d). Table 4-3 details the drainage characteristics for Drainage Basin 3.

4.1.4 Drainage Basin 4

Drainage Basin 4 consists of the western portion of the Industrial Area and exits to the McKay Diversion Canal. The McKay Diversion Canal drains to the Walnut Creek Diversion Canal, which flows toward the north end of the Industrial Area. The 29 acres of the drainage area have little industrial development (i.e., a warehouse and a material storage yard near Building 130). The area mainly consists engineering and administrative buildings (EG&G 1994d). The drainage characteristics are summarized in Table 4-4.

4.1.5 Drainage Basin 5

This drainage area is a collection of drains that cover portions of the southern Industrial Area that eventually exit to the SID. Hydrologically, the area around the buildings drains south and down the 881 Hillside toward the SID. Seeps are located near the southwestern Industrial Area boundary (EG&G 1994d). The drainage area characteristics are outlined in Table 4-5.

TABLE 4-3
OU12 Field Sampling Plan
Characteristics of Drainage Basin 3

Subbasin	Major Buildings in Subbasin	Drainage Area (acres)	Drains to	Location of Subbasin Drain
CWAC12	119, 127, 128	9	CWAC1	Three storm sewer outfalls flowing north under the northern edge of CWAC12 drain the subbasin to a ditch running through CWAC1.
CWAC1	111, 112, 113, 115, 335	17	CWAC13	Ditch north of Sage Ave. drains to CWAC13 at the eastern end of CWAC1.
CWAC11	331, 333 (north), 334 (north), 551 (west)	9	CWAC13	Two culverts, an 18-inch CMP and an 8-inch CMP, are located at the northeast corner of subbasin CWAC11.
CWAC13	NONE	3	CWAC3	A 64-inch CMP culvert is located at the north end of CWAC13.
CWAC10	559 (except southeast), 561 (north), 776 (west), 778 (west)	9	CWAC3	An 18-inch CMP culvert located along the northwestern boundary of CWAC10 drains to the channel that runs through CWAC3; also a 14-inch CMP crosses the subbasin boundary under the intersection of Sixth Street and South 71 Drive
CWAC3	371, 374, 516, 517, 518	26	North Walnut Creek	A 48-inch CMP culvert is located near the northeast corner of subbasin CSWA3. This sewer drains directly into the 72-inch storm sewer that empties into North Walnut Creek.
CWAC2	367	18	CWAC5	A 54-inch CMP storm sewer is located at northern end of CWAC2.
CWAC5	NONE	10	North Walnut Creek	A 72-inch CMP storm sewer carries flow from east end of CWAC5 to North Walnut Creek.
CWAC4	262, 373, 376, 790	10	North Walnut Creek	A 36-inch-diameter culvert located at north end of CWAA1 drains to North Walnut Creek.
CWAC6	701, 712, 713, 770, 771, 774, 776 (northeast), 777 (northwest)	10	CWAC7	An 8-inch-diameter PVC storm sewer is located at the northeast corner of subbasin CWAC6.
CWAC7	NONE	8	North Walnut Creek	Only a portion of CWAC7 drains to N. Walnut Creek. The flow that enters from CWAC6 and the flow contributing north (or downgradient) of the Interceptor Trench System will flow through the 60-inch-diameter storm sewer at the north end of CWAC7. This sewer connects to the 72-inch storm sewer that drains to North Walnut Creek.
CWAA1	NONE	15	North Walnut Creek	A 36-inch culvert located at the center of the northern boundary of the CWAA1 drains the subbasin to North Walnut Creek.

Notes: CMP = corrugated metal pipe

PVC = polyvinyl chloride

TABLE 4-4
OU12 Field Sampling Plan
Characteristics of Drainage Basin 4

Drainage Basin	Major Building in Subbasin	Drainage Area (acres)	Drains to	Location of Subbasin Drain
CWADIV2	130, 131	29	McKay Diversion Canal	A 36-inch CMP culvert located at the northern end of CWADIV2 that drains to the McKay Diversion Canal

CMP = corrugated metal pipe

TABLE 4-5
OU12 Field Sampling Plan
Characteristics of Drainage Basin 5

Subbasin	Major Buildings in Subbasin	Drainage Area (acres)	Drains to	Location of Subbasin Drain
CDIV1	440 (except northeast), 447 (west), 448, 451, 460	14	DIV3	A 36-inch-diameter culvert drains the storm sewer network, south of Building 460; the storm sewers daylight on the hillside south of Building 664 into the South Interceptor Ditch (SID)
DIV3	850, 881 883 (south), 885, 887		SID	Drainage in the vicinity of Buildings 850 and 881 drains to the south. The Building 881 footing drain is collected and diverted to the OU1 treatment facility.

4.1.6 Drainage Basin 6

Drainage Basin 6 encompasses two subbasins totaling 11 acres in the northeastern portion of the Industrial Area. An extensive area of seepage occurs north of the ITS, and water flow may discharge into this drainage basin. This drainage basin contains only one major building (Building 964) and discharges to the A-series ponds. Table 4-6 summarizes the drainage characteristics for Drainage Basin 6.

4.1.7 Drainage Basin 7

Drainage Basin 7 is associated with the ITS and the Solar Evaporation Ponds. This area encompasses three subbasins and drains an area of 24 acres. The water collected by the ITS is stored in tanks north of the Industrial Area and is eventually treated in Building 374 with the evaporators of Building 970 serving as a backup. Groundwater flow beneath Drainage Basin 7 is also collected by the ITS and treated using the onsite systems. CWAC8 is composed of the Solar Evaporation Ponds that are associated with OU4 activities (EG&G 1994d). Table 4-7 details the drainage characteristics for this drainage basin.

4.2 LOCATION SCREENING CRITERIA

The DQOs for this FSP are (1) to establish the presence or absence of contamination in surface water and sediments within stormwater channels and (2) to collect data that will support a human health baseline risk assessment.

Proposed sampling locations were selected based on the evaluation of the following criteria:

- location of drainage with respect to known or suspected areas of contamination, i.e., IHSSs;

TABLE 4-6
OU12 Field Sampling Plan
Characteristics of Drainage Basin 6

Subbasin	Major Buildings in Subbasin	Drainage Area (acres)	Drains to	Location of Subbasin Drain
CWAB1	964	7	CWAB2	A 48-inch-diameter culvert drains CWAB1 toward the northeast into CWAB2.
CWAB2	NONE	4	A-series ponds	A 48-inch CMP culvert drains CWAB2 toward the northeast into a channel leading to the A-series ponds.

Notes:

CMP = corrugated metal pipe

TABLE 4-7
OU12 Field Sampling Plan
Characteristics of Drainage Basin 7

Subbasin	Major Buildings in Subbasin	Drainage Area (acres)	Drains to	Location of Subbasin Drain
CWAC9	215, 705, 706, 729, 777 (northeast), 779, 782, 928, 966	6	CWAC7	An 18-inch CMP storm sewer that drains CWAC9 between the 207A and 207C Solar Ponds and daylights on the hillside just north of the Solar Ponds
CWAC8	788, Solar Ponds 207A, 207B, 207C	10	Infiltration/ITS	Not hydrologically connected to Industrial Area drainage patterns. Precipitation falling in subbasin CWAC8 is collected and sent to the Building 374 treatment facility.
CWAC7	NONE	8	ITS	The portion of CWAC7 upgradient from the ITS flows into the ITS.

Notes:

CMP = corrugated metal pipe
ITS = Interceptor Trench System
PCB = polychlorinated biphenyl

- location and data quality of previously collected samples;
- location of proposed sampling efforts under other RFETS programs; and
- location of areas of sediment accumulation and/or standing water.

Each of the seven major drainage basins (Plate 1) was inventoried for the IHSSs that they contained, and the potential for either sheet wash or leaching and near-surface advective transport was evaluated. Because there are more than 200 IHSSs, virtually all of the surface drainage structures have at least the potential for contamination of sediment and surface-water. Thus, this evaluation was not an effective screening tool.

The second criterion was a review of the data collected during previous sampling campaigns. One of the DQOs for this sampling campaign is to provide data that can be used for quantitative risk assessments. This criterion requires that any data used have sufficiently low detection limits to meet the appropriate hazard levels. Virtually none of the historical sampling efforts were planned or executed with the objective of providing data for a quantitative baseline risk assessment. Therefore, there is a considerable spread on the reported detection limits and the levels to which the data were validated. This criterion did not allow the elimination of any potential sediment-sampling sites. However, it did lead to the removal from the OU12 program of several surface-water sampling sites that are part of the EG&G quarterly monitoring program and have DQOs consistent with the proposed OU12 surface-water sampling program. Because this effort focuses on extreme moisture conditions, the choice of sampling times may not coincide with RFETS regular quarterly sampling. If the events coincide, the appropriate data from the quarterly sampling campaign will be used and will not duplicate the effort.

The last criterion was an evaluation of the locations that have been proposed for surface-water or sediment sampling under other RFETS programs. Currently, there are three proposed sampling campaigns. The first is the OU13 sediment sampling plan to be conducted along the course of the Central Avenue Ditch and out to the confluence of the ditch with South Walnut Creek. A second series of samples will be collected during the characterization of OU4 for the Phase II RI, which is not a part of this investigation. The third sampling effort consists of the foundation drains that are proposed for sampling as part of the OU8 RFI/RI. Because the OU13 sampling is not scheduled until fiscal year 1996, it is possible that the OU13 sampling will be incorporated into the OU12 sampling effort (EG&G 1994e). A total of 30 percent of the proposed sampling locations were planned and funded under existing sampling and monitoring programs. In addition to these proposed OU sampling programs, outfalls were selected for incorporation into this proposed surface-water and sediment sampling program using information from the evaluation of building sumps and footing drains summarized in the OU8 Technical Memorandum (EG&G 1994c).

Selection of the actual sampling sites was accomplished during a series of walks along the various flow paths through the individual basins. Particular attention was paid to locations identified in the *Rocky Flats Plant Drainage and Flood Control Master Plan* (EG&G 1992g) as being undersized for a 100-year recurrence interval, six-hour storm event. At these locations, areas that would be flooded as a result of drainage system overflow were included for sampling.

4.3 TECHNICAL SAMPLING APPROACH

The nature of the pathways in which surface-water collects and migrates (i.e., along channels and other topographic depressions) requires a focused sampling strategy to generate representative samples. The collection of both surface-water and sediment samples will be confined to the thalweg of the pathway channels. In the case of building foundation drains,

the samples will be collected in the immediate vicinity of the outfall. Where samples are collected from the same drainage, sampling will progress from downstream toward upstream locations to minimize cross contamination. During the site reconnaissance, particular attention was paid to the areas where sediments would collect over the long term and to location accessibility. Examples of these locations are changes in slope along a drainage, upstream ends of culverts, and areas of over-bank flow in the vicinity of undersized stormwater conveyance structures.

The focus of this investigation is on surficial sediments and surface water. The collection of surface water is simply a matter of adjusting the collection method for the flow conditions, e.g., low-flow sampling as described in RFETS standard operating procedure (SOP) SW.03 (EG&G 1994f). Because the alluvium on RFETS contains some gravel and cobbles, sediment sampling is more complex. Generally, the majority of hazardous constituents are associated with fine-grained materials, particularly clays and iron and manganese oxides. Within the drainages at RFETS, most of the sediment left in the channels after the latest storm event is relatively fine grained. The approach will be to collect bulk samples from the fine-grained material (sand size or less than 1 millimeter in diameter) along the course of the channel. The samples will be collected from the top 5 centimeters of sediment and over a sufficient area along the channel to provide the necessary mass of sample. The surface layer of sediment will be sampled because this top 5-centimeter layer is most likely to be transported downstream or downwind.

4.4 ANALYTICAL RATIONALE

One objective of the proposed surface-water and sediment sampling program is to determine the presence or absence of contamination in these media for future evaluation tasks. Because contaminants could potentially be transported via these media, the sampling rationale was developed considering the hydrology of the drainage basins. As described previously, the

drainage basins constitute the surface-water discharge pathways from the Industrial Area. Because the chemical handling activities and production operations conducted within the Industrial Area perimeter were not generally specific to a drainage basin, the proposed analyses for the surface-water and sediment samples are not specific to a drainage basin. Proposed surface-water and sediment samples in each Industrial Area drainage basin will be analyzed for an identical set of parameters, with one noted exception stated at the end of this section.

As described in Section 4.2, surface-water and sediment samples will be collected from specific locations in each major drainage basin in the Industrial Area and sent to the laboratory for analysis. Based on information from the data sources described in Section 2.1, an evaluation was made to determine potential sources of contaminants of concern in each drainage basin. Information pertaining to the following was reviewed to evaluate possible analyte lists for Industrial Area drainage basins:

- CERCLA OUs;
- RCRA storage unit locations;
- PCB areas of concern;
- historical operations and activities; and
- previous surface-water and sediment analytical data.

The potential contaminants of concern associated with IHSSs in portions of the OUs, the locations of RCRA storage units, and PCB potential areas of concern for each Industrial Area drainage basin are summarized in Table 4-8. Selected data from previous surface-water and sediment sampling programs are summarized in Tables 2-5 and 2-6.

TABLE 4-8
OU12 Field Sampling Plan
Summary of Drainage Basin Contaminants of Concern
in the Industrial Area
Page 1 of 5

Drainage Basin	Operable Units	Potential Contaminants of Concern (a)	RCRA Unit Locations	PCB PAC NO.
1	OU2	RADIONUCLIDES, BERYLLIUM, SOLVENTS, ORGANIC LIQUIDS, INORGANICS	Building 444 Building 884 904 Pad	400-800 600-1000 600-1002 600-1003 800-1209 800-1210
	OU8	SOLVENTS AND RADIONUCLIDES	Building 447	
	OU9	RADIONUCLIDES, ACIDS, BASES, NITRATES, HEXAVALENT CHROMIUM, METALS, PHOSPHATES, SOLVENTS	Building 889 Building 428 Building 866	
	OU10	FUEL OIL, ACIDS, METALS, RADIONUCLIDES, VOLATILE ORGANIC COMPOUNDS, NITRATES	Building 123 Building 865	
	OU12	RADIONUCLIDES, BERYLLIUM, SOLVENTS, HEXAVALENT CHROMIUM, METALS, ACIDS		
	OU13	RADIONUCLIDES, NITRATES, FUEL OIL, BERYLLIUM, BASES, HYDROGEN PEROXIDE, SOLVENTS		
	OU14	RADIONUCLIDES, COOLANTS, SOLVENTS, VOLATILE ORGANIC COMPOUNDS, BERYLLIUM		

TABLE 4-8
OU12 Field Sampling Plan
Summary of Drainage Basin Contaminants of Concern
in the Industrial Area
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Drainage Basin	Operable Units	Potential Contaminants of Concern (a)	RCRA Unit Locations	PCB PAC NO.
2	OU6	RADIONUCLIDES	Building 750	500-901 500-904
	OU8	SOLVENTS, RADIONUCLIDES, BERYLLIUM	Building 561 Building 980	500-905 700-1103 700-1104 700-1111
	OU9	RADIONUCLIDES, PROCESS WASTE	Tent 1 750 Pad	900-1306
	OU10	WASTE OILS, SOLVENTS, PAINTS, RADIONUCLIDES, VOLATILE ORGANIC COMPOUNDS, NITRATES	Building 569 Building 707	
	OU13	RADIONUCLIDES, METALS, BERYLLIUM, SOLVENTS, ACIDS	Building 991 Building 777	
	OU14	RADIONUCLIDES, PROCESS WASTE	Building 528	
	OU16	SOLVENTS, ETHYLENE GLYCOL, RADIONUCLIDES, PCBS		
	—			

TABLE 4-8
OUI2 Field Sampling Plan
Summary of Drainage Basin Contaminants of Concern
in the Industrial Area
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Drainage Basin	Operable Units	Potential Contaminants of Concern (a)	RCRA Unit Locations	PCB PAC NO.
3	OU6	RADIONUCLIDES	Building 331	300-708 300-702
	OU8	SOLVENTS, PHOSPHATES, RADIONUCLIDES, BASES, PROCESS WASTE, ACIDS, METALS	Building 561	100-607 300-709
			Building 776	500-900 500-902
			Building 374	700-1102
	OU9	RADIONUCLIDES, ORGANICS, PROCESS WASTE, INORGANICS	Building 732	700-1112 700-1105
			Building 774	
	OU10	METALS, OILS, SOLVENTS, RADIONUCLIDES, COOLANTS	Building 371	
			Building 771	
	OU13	RADIONUCLIDES, OILS, METALS, GASOLINE, DIESEL, PROCESS WASTE	Building 559	
			Building 777	
			Building 779	
	OU14	RADIONUCLIDES, PROCESS WASTE		
	OU15	RADIONUCLIDES, SOLVENTS		
4	OU7	RADIONUCLIDES, OILS, SOLVENTS, PCBS	None identified	100-608
	OU10	RADIONUCLIDES, OILS, SOLVENTS, METALS		
	OU11	NITRATES, VOLATILE ORGANIC COMPOUNDS, RADIONUCLIDES		

TABLE 4-8
OU12 Field Sampling Plan
Summary of Drainage Basin Contaminants of Concern
in the Industrial Area
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Drainage Basin	Operable Units	Potential Contaminants of Concern (a)	RCRA Unit Locations	PCB PAC NO.
5	OU1	FUEL OIL, DIESEL, RADIONUCLIDES, METALS, SOLVENTS, NITRATES	Building 444 Building 447 Building 460	400-116.1 400-801 800-1207 800-1208 800-1211
	OU2	RADIONUCLIDES, OILS, SOLVENTS, METALS	903 Pad	
	OU5	RADIONUCLIDES, OILS, SOLVENTS, PCBS	Building 664 Building 881	
	OU6	RADIONUCLIDES	Building 883	
	OU10	RADIONUCLIDES, OILS, SOLVENTS, PAINTS, ACIDS, CYANIDE	Building 952 Building 887	
	OU12	RADIONUCLIDES, PCBS, BERYLLIUM, SOLVENTS, METALS, HEXAVALENT CHROMIUM	Building	
	OU14	RADIONUCLIDES, OILS, SOLVENTS, PROCESS WASTE		
	OU15	RADIONUCLIDES, VOLATILE ORGANICS, SOLVENTS, LABORATORY WASTE		
6	OU6	RADIONUCLIDES	None identified	None identified
	OU9	PROCESS WASTE		
	OU10	RADIONUCLIDES, OILS, METALS, VOLATILE ORGANIC COMPOUNDS, NITRATES		

TABLE 4-8
OU12 Field Sampling Plan
Summary of Drainage Basin Contaminants of Concern
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Drainage Basin	Operable Units	Potential Contaminants of Concern (a)	RCRA Unit Locations	PCB PAC NO.
7	OU8	RADIONUCLIDES, METALS	Building 788	None identified
	OU9	PROCESS WASTE, RADIONUCLIDES, NITRATES, ACIDS	Building 777	
			Solar Pond Surge Tanks	
			Building 910	
			Building 779	

Note:

- (a) = Contaminants that may have been associated with activities at Individual Hazardous Substance Sites (IHSSs) within each Operable Unit (OU)
- PAC = Potential Area of Concern
- PCB = polychlorinated biphenyl
- RCRA = Resource Conservation and Recovery Act

Based on the information presented in Table 4-8, the following list of analytes for both Industrial Area surface-water and sediment samples for each drainage basin was identified:

- total radionuclides;
- Contract Laboratory Program (CLP) total metals;
- VOCs;
- hexavalent chromium (sediment); and
- major cations and anions (surface-water).

Because the sediment samples will have been transported over land via either sheet wash or wind, it is not expected that significant concentrations of VOCs will be found. However, because of their widespread use, it is necessary to analyze for them.

The data for analytes detected in previous surface-water and sediment samples are summarized in Appendices A and B. The following analyses were also included for proposed Industrial Area samples in each drainage basin:

- SVOCs;
- PCBs; and
- organochlorine pesticides.

A review of previous operations and activities identified an area previously used as a herbicide mixing and storage area located in Drainage Basin 3. Because of these previous activities, one proposed surface-water and sediment sampling location from Drainage Basin 3, downstream of the herbicide area, will be analyzed for herbicides in addition to the analyses listed above.

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Fate and transport considerations for the proposed analytical parameters were also evaluated. Many of the contaminants of concern associated with the Industrial Area are either very volatile, soluble in water, or insoluble in water. Because the objective of the sampling program is to determine the presence or absence of contamination, analytical parameters are proposed for both surface-water and sediment, regardless of the solubility or volatility of the contaminants. The results of these analyses will be evaluated to assess fate and transport mechanisms.

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5.0 SAMPLE COLLECTION AND ANALYSIS

The following sections provide a description of the proposed surface-water and sediment sampling locations; the types and frequency of sample collection; the equipment and procedures that will be used to collect the samples; the sample handling and documentation procedures; and the analytical requirements. Sampling locations, sample types and frequency, and analytical requirements are based on the rationale presented in Section 4.0.

5.1 SAMPLING LOCATION AND FREQUENCY

The rationale for the selection of sampling locations is presented in the previous section. These locations are plotted on Plate 2. The sampling frequency will be different for the two media. Sample types and locations are summarized in Table 5-1. Since the inception of this project, it has been learned that the major drainage ditches within the Industrial Area are scheduled for clean-out during the early spring of 1995. This has placed an additional constraint on this sampling campaign, i.e., sediment samples must be collected from areas to be cleaned before the cleaning occurs. This process will require that many of the sediment samples be collected in February 1995 when the ground may be frozen. At those locations, available surface water will be collected at the time the sediment samples are collected. It is possible that the ground at these locations will be frozen and that it will not be possible to collect water samples. Therefore, these locations will be reoccupied in the spring (wet season) and the late summer

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
DRAINAGE BASIN 1				
1-1	Sediment	Inlet to S-1020	None	Head of drainage basin 1; relatively uncontaminated sediment.
1-2	Sediment	Inlet to C-62	None	Central Avenue ditch between IHSSs 148 and 129; determine contribution from IHSS 148.
1-3	Sediment	Outlet to C-62	13/191	Central Avenue ditch below IHSSs 129 and 191; determine contribution of contamination from IHSSs 129 and 191.
1-4	Sediment	Inlet to C-19	12/157.2	Head of ditch draining 400 area buildings; determine contaminants contributed by Building 460.
1-5	Sediment	Inlet to S-1015	12/157.2	400 area ditch above confluence of ditch draining OU12; determine contributions from IHSS 182 and 400 area buildings.
1-6	Sediment/Surface Water	Inlet to C-18	12/189 and 12/157.2	Mouth of OU12 drainage ditch; determine contributions from IHSSs 116.2, 136.2, and 189.
1-7	Sediment	Inlet to C-68	8/172 and 13/190	Central Avenue ditch near middle of IHSS 152; determine contribution from IHSSs 193 and 152.
1-8	Sediment	Outlet to C-9	14/160	Head of ditch draining IHSS 160; determine sediment quality at upper edge of IHSS 160.
1-9	Sediment	Inlet to C-15	14/160	Sediment collection area at downstream edge of IHSS 160; determine contaminant contribution from IHSS 160.

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
1-10	Sediment	Outlet to C-14	14/160	Ditch east of IHSS 160; determine potential windblown contamination from IHSS 160.
1-11	Sediment	Inlet to S-1013	13/117.3	Sediment collection area for ditches draining OU12 and IHSSs 152, 160, and 117.3; determine contamination contributed by aforementioned IHSS.
1-12	Sediment	Inlet to S-1036	8/172 and 13/190	Central Avenue ditch near downstream edge of IHSS 152; determine total contamination contribution from IHSS 152.
1-13	Sediment	Inlet to C-70	8/172 and 13/190	Central Avenue ditch in the vicinity of IHSS 117.3; determine contribution from IHSS 117.3.
1-14	Sediment	Inlet to C-149	14/162	Sedimentation location for ditch draining IHSS 162; determine contribution from IHSS 162.
1-15	Sediment	Inlet to C-71	8/172 and 13/190	Central Avenue ditch above confluence with ditch draining IHSS 162; determine contamination contribution from IHSS 190.
1-16	Sediment	Central Avenue Ditch between S-1011 and C-83	13/190	Central Avenue ditch adjacent to IHSS 164.3; determine contamination contribution from IHSS 164.3.
1-17	Sediment	Inlet to C-146	None	Drainage from parking area south of IHSS 164.3; determine contribution of contamination from IHSS 164.3

TABLE 5-1
OUI2 Field Sampling Plan
Sample Types and Locations
Page 3 of 13

Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
1-18	Sediment	Inlet to C-144	None	Sediment collection location in ditch draining central 800 area; determine contribution of contamination from central 800 area.
1-19	Sediment	Central Avenue Ditch between C-83 and C-84	13/190	Central Avenue ditch below confluence with central 800 area ditch; determine total contamination associated with sediment at this location.
1-20	Sediment	Outlet to C-92	None	Surface water ponding area south of Building 865; determine contamination contribution from vicinity of Building 865.
1-21	Sediment	Depression between Buildings 865 and 886	None	Drainage ditch west of IHSS 164.2; determine contamination contribution from IHSS 164.2.
1-22	Sediment	Outlet to C-142	13/190	Central Avenue ditch at confluence with northern drainage from IHSS 164.2; determine the contaminants contributed by IHSS 164.2.
1-23	Sediment	Inlet to C-89	None	Head of drainage near subcontractor yard; determine contamination near boundary of basins 1 and 5.
1-24	Sediment	Inlet to C-86	13/190	Central Avenue ditch above confluence with subcontractors yard drainage; determine total sediment contamination before addition of material from vicinity of subcontractor yard.
1-25	Sediment	Inlet to S-1005	8/172 and 13/190	Mouth of subcontractor yard ditch; determine total contribution of contamination from vicinity of subcontractor yard.

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
1-26	Sediment/Surface Water	Inlet to C-95	13/190	Central Avenue ditch in vicinity of IHSS 213; determine contaminant contribution from IHSS 213.
DRAINAGE BASIN 1 (continued)				
1-27	Sediment	Inlet to C-97	13/190	Central Avenue ditch north of IHSS 112; determine contaminants contributed by IHSS 112.
1-28	Sediment	Inlet to C-136	13/190	Central Avenue ditch near IHSSs 108, 113, and 153; determine contaminants contributed by these IHSS.
1-29	Sediment	Inlet to C-107	13/190	Overflow ditch from Central Avenue ditch; determine whether sediment contamination has been spread during storm overflow events.
1-30	Sediment	Inlet to C-10	12/157.2	Drainage from vicinity of Buildings 444 and 450; determine contaminants contributed in the vicinity of Buildings 444 and 450.
NB: A maximum of five additional surface water samples will be collected at sediment sampling locations if water is present.				
DRAINAGE BASIN 2				
2-1	Sediment	Inlet to C-60	None	Drainage ditch on north side of Central Avenue near IHSSs 134(S) and 156.1; determine contaminants contributed by IHSSs 134(S) and 156.1.
2-2	Sediment	Inlet to C-74	13/117.2	Storm drain near IHSSs 158 and 117.2; determine contaminant contributions from IHSSs 158 & 117.2.

TABLE 5-1
OUI2 Field Sampling Plan
Sample Types and Locations
Page 5 of 13

Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
2-3	Sediment	Inlet to S-1037	None	Drainage ditch near IHSS 169; determine contaminant contribution from IHSS 169.
2-4	Sediment	Outlet of C-77	None	Drainage ditch along PA security zone above confluence with northern Central Avenue ditch; determine contaminant contributions from IHSSs 117.1, 117.2, 158, and 169.
2-5	Sediment	Inlet to C-76	8/172	North Central Avenue ditch near divergence from Central Avenue; determine total contaminant contribution from North Central Avenue ditch.
2-6	Sediment	Inlet to C-80	None	Sediment collection area within drainage from RCRA materials storage facility; determine contaminant contribution from this facility.
2-7	Sediment	Depression on south side of Building 708	None	Stormwater ponding area near PCB-contaminated transformer pad; determine contaminant contributions near transformer pad.
2-8	Sediment	Ditch on south side of Protected Area Perimeter Road	8/123.1	Drainage ditch on south side of PA boundary road; determine contaminants near abandoned industrial wastewater transfer line.
2-9	Sediment	Confluence of ED-1, C-138, and EE-5	None	Sediment basin at confluence of drainages for southwestern area of PA; determine the contaminant contributions from the southwestern PA.
2-10	Sediment	Inlet to C-82	None	PA boundary ditch near IHSS 147.1; determine contaminants contributed by IHSS 147.1.

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
2-11	Sediment/Surface Water	Inlet to BB-7	None	PA boundary ditch at point where stream enters buried stormwater transfer system; determine total contaminant load from southwestern area of PA.
2-12	Sediment	Below outlet of S-2014	None	Drainage from hillside below Building 997; determine contaminant contributions from the hillside below Building 997.
2-13	Sediment/Surface Water	Outlet of EE-1	None	South Walnut Creek below confluence with ditches draining hillsides; determine total contaminant load from upper PA.
2-14	Sediment	South drainage into EE-1	None	Mouth of ditch draining hillside south of South Walnut Creek; determine contaminant contributions from hillside south of South Walnut Creek.
2-15	Sediment/Surface Water	Seep on north facing hillside	None	Seep on hillside south of South Walnut Creek; determine contamination accumulated in sediment and carried by water from seep.
2-16	Sediment/Surface Water	Inlet to AA-8	None	Upper wetland of South Walnut Creek; determine contamination accumulated in sediment and water in the wetland.
2-17	Sediment/Surface Water	Wetlands in vicinity of S-2016	None	Wetland near Building 991; determine contamination contributed by IHSSs 173 and 184 and accumulated in the wetland.
2-18	Sediment	Outlet of C-112	None	Drainage ditch draining hillside on north side of South Walnut Creek; determine the contaminant contribution from storage area east of the solar ponds.

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
2-19	Sediment	Inlet to C-113	None	Mouth of ditch draining hillside on north side of South Walnut Creek; determine total contaminant contribution from hillside.
2-20	Sediment/Surface Water	Wetland at AA-2	None	South Walnut Creek; determine the total contaminant load in South Walnut Creek at the edge of the Industrial Area.
DRAINAGE BASIN 3				
3-1	Sediment	Inlet to S-1054	None	Near head of tributary to North Walnut Creek; determine whether contamination has reached an area generally upwind and upgradient of the Industrial Area.
3-2	Sediment	Hillside south of storage pad/parking lot	None	Hillside below reported herbicide storage area; determine whether there were herbicide spills within the storage area that migrated downgradient.
3-3	Sediment/Surface Water	Inlet of C-34	None	Near head of ditch draining northwestern sector of Industrial Area; determine whether contaminants have been introduced near western edge of Industrial Area.
3-4	Sediment/Surface Water	Inlet of S-1023	None	Western drainage ditch up stream of first major IHSS; determine background or baseline contaminant concentrations.
3-5	Sediment	Inlet of C-44	13/128	Ditch passing through IHSSs 134(N) and 128; determine contaminant contributions from IHSSs 128 and 134(N).

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
3-6	Sediment	Inlet of C-57	13/172	Ditch draining area of IHSSs 156.1, 172, and 181; determine contaminant contributions from IHSSs 156.1, 172, and 181.
3-7	Sediment	Inlet of S-1028	14/156.1	Ditch draining vicinity of IHSS 156.1; determine contaminant contributions from IHSS 156.1.
3-8	Sediment	Inlet of S-2052	13/186	Northwestern Industrial Area drainage ditch; determine contribution of contaminants from IHSSs in the vicinity.
3-9	Sediment/Surface Water	Seep west of Building 371 (outside fence)	None	Seep in vicinity of Building 371; determine contamination levels in sediments and seep water near Building 371.
3-10	Sediment	Inlet of KK-5	None	Sediment in vicinity of fuel tanks; determine whether contamination has been released from the fuel tanks.
3-11	Sediment	Ditch south of road	None	PA perimeter road ditch; determine whether contamination has migrated down to the perimeter road ditch.
3-12	Sediment/Surface Water	Near SW-118	None	Upper wetland within Industrial Area on North Walnut Creek; determine contaminant accumulation in the upper wetland within the Industrial Area.
3-13	Sediment	Inlet to C-50	None	Ditch draining area around Building 371; determine contribution of contaminants from vicinity of Building 371.

TABLE 5-1
OUI2 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
3-14	Sediment	Inlet to S-2026	None	Ditch on south side of perimeter road; determine whether contamination is present in sediments adjacent to security exclusion zone.
3-15	Sediment/Surface Water	Wetland around substation	None	Wetland formed by seeps in vicinity of electrical substation; determine contaminant contributions from Building 371 and substation and their accumulation in the wetland.
3-16	Sediment/Surface Water	Wetland at inlet of JC-3	None	Wetland upgradient of IHSS 143; determine contaminant contributions of areas upgradient of the wetland and accumulation of contaminants within the wetland.
3-17	Sediment	Ditch on north side of Protected Area perimeter road	None	PA perimeter road ditch; determine contamination contributions upstream of IHSS 143.
3-18	Sediment/Surface Water	Wetland to west of north portal	None	North Walnut Creek; determine accumulation of contaminants in small wetland along North Walnut Creek.
3-19	Sediment	Inlet to JD-1	None	Ditch draining area of IHSSs 172, 126.1, and 126.2; determine contaminant contributions from IHSSs 172, 126.1, and 126.2.
3-20	Sediment/Surface Water	Wetland at outlet of C-120	None	Ditch draining area of Buildings 771 and 774; determine contaminant contributions from foundation drains for Buildings 771 and 774.

TABLE 5-1
OU12 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
3-21	Sediment/Surface Water	Wetland at inlet to C-117	None	Ditch draining area around Buildings 771 and 774 and area below north interceptor trench; determine the total contaminant load at mouth of the ditch.
3-22	Sediment	Outlet of GA-1	None	Drainage ditch adjacent to Building 559; determine contaminant contributions from IHSSs 117.1 and 197.
3-23	Sediment/Surface Water	Wetland at outlet of GG-1	None	Seep on hillside below Building 559; determine contamination accumulation in seep sediments and waters.
3-24	Sediment/Surface Water	Wetland at power poles	None	Second seep on hillside below Building 559; same as 3-23.
3-25	Sediment	Outlet of C-124	None	Ditch draining hillside in vicinity of Buildings 566 and 575; determine contaminant contributions from hillside.
3-26	Sediment	Inlet of C-122	None	Roadside ditch draining area between Buildings 771 and 776; determine contaminants contributed by activities in large area between buildings.
3-27	Sediment	Outlet of propane storage pad	None	Area west of solar evaporation ponds; determine contamination contributed to sediments in area of ponds.
3-28	Sediment/Surface Water	Outlet of Building 771/774 floor drains	8/172	Outlet of Building 771 foundation drain; determine contaminants contributed by foundation drain.

TABLE 5-1
OUI2 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
3-29	Sediment/Surface Water	Location of SW093	None	North Walnut Creek; determine total contaminant load to the creek at northern boundary of Industrial Area.
3-30	Sediment	Outlet of Building 371 roof drains	None	Sediment near western egress of Building 371; determine contaminants contributed by operations at Building 371.
DRAINAGE BASIN 4				
4-1	Sediment/Surface Water	Inlet of C-31	None	West diversion ditch; determine contaminants contributed to the west diversion ditch at closest point to the Industrial Area.
DRAINAGE BASIN 5				
5-1	Sediment/Surface Water	Outfall of YY-1 and WW-1 collection	None	South interceptor ditch at edge of IHSS 115; determine contaminants contributed by IHSSs 196 and 115.
5-2	Sediment	Outfall of PP-1	None	Drainage from vicinity of Building 664; determine contaminants contributed to south interceptor ditch via this pathway.
5-3	Sediment	Outfall of OO-1	None	Drains from Building 850; determine contaminants contributed by Building 850 drains.
5-4	Sediment	Outfall of NN-1	None	Ditch from vicinity of Building 850; determine contaminants contributed from this area.
5-5	Sediment	Inlet of C-142	None	Drainage from west side of Building 881; determine contaminants contributed from IHSSs in the vicinity of Building 881.

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TABLE 5-1
OUI2 Field Sampling Plan
Sample Types and Locations
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Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
5-6	Sediment	Inlet of S-1072	None	Drainage between Buildings 881 and 883; determine contaminants in vicinity of Buildings 881 and 883 that would be susceptible to sheet wash.
5-7	Sediment/Surface Water	Outlet of MM-1 (wetland)	None	Ditch draining east side of Building 881; determine contaminants that were contributed by IHSSs 177 and 103.
5-8	Sediment	Outlet of C-5	None	Drainage along road in vicinity of IHSSs 103, 104, and 130; determine contaminants that were contributed by IHSSs 103, 104, and 130.
5-9	Sediment/Surface Water	SID below Pad 904	None	South interceptor ditch; determine contaminants that were contributed from upstream IHSSs.
DRAINAGE BASIN 6				
6-1	Sediment	Inlet of C-115	None	Tributary to North Walnut Creek; determine contaminants contributed by north end of storage area located to the east of the solar evaporation ponds.
DRAINAGE BASIN 7				
7-1	Sediment	About 300 feet from the west end of interceptor trench (N 1/3)	None	North infiltration ditch; determine contaminants that have collected at western end of ditch.
7-2	Sediment	Below outlet of DDD-1	None	Drainage from area between solar evaporation ponds; determine contaminants in sediments between ponds and interceptor ditch.

TABLE 5-1
OUI2 Field Sampling Plan
Sample Types and Locations
Page 13 of 13

Sample Designation	Type	Location	OU/IHSS	Sample Location Rationale
7-3	Sediment	Interceptor trench below large Solar Pond	None	North infiltration ditch; determine contaminants that have collected in central portion of ditch.
7-4	Sediment	Interceptor trench below eastern Solar Ponds	None	North infiltration ditch; determine contaminants that have collected in eastern portion of ditch.

Notes:

C = culvert
 IHSS = Individual Hazardous Substance Site
 PA = Protected Area
 PCB = polychlorinated byphenyl
 RCRA = Resource Conservation and Recovery Act
 S = surface ditch or culvert

Stormwater control structure designations and locations are plotted on Plate 3. (Wright Water Engineers 1993.)

(dry season) for the collection of surface-water samples. If it proves to be possible to collect water during the February sediment sampling, we will have three analytical data sets for surface water: one in equilibrium with the sediment, one during the wet season, and one during the dry season.

The two surface-water sampling events allow determination of the effects of wet- and dry-flow conditions or the onset of a source whose flow is intermittent. The first set of samples will be the most extensive. It will be collected in the spring after the first sustained thaw. The intermittent streams, wetlands, and selected foundation drains will be sampled. The second set of samples will be collected in the late summer when the wetlands are at low flow and the intermittent streams and many of the building foundation drains are dry. These data will allow checking of the seasonal variability of the water quality without duplicating the efforts of the EG&G Surface Water Group.

5.2 SAMPLING EQUIPMENT AND PROCEDURES

All sediment and surface-water samples will be collected in accordance with currently approved SOPs contained within the EG&G Environmental Management Division Manual (5-21000-OPS) (EG&G 1994f). Of particular importance for the collection of surface-water samples are the following SOPs:

- SOP SW.01, *Surface Water Data Collection Activities*;
- SOP SW.02, *Field Measurement of Surface Water Parameters*;
- SOP SW.03, *Surface Water Sampling*;
- SOP SW.08, *Pond Sampling*;
- SOP SW.09, *Industrial Effluent and Pond Discharge Sampling*; and
- SOP SW.15, *River and Ditch Sampling*.

The SOP that applies specifically to the collection of sediments is the following:

- SOP SW.06, *Sediment Sampling*.

The SOPs that apply to both surface-water and sediment sampling activities are the following:

- SOP FO.03, *General Equipment Decontamination*;
- SOP FO.07, *Handling of Decontamination Water and Wash Water*;
- SOP FO.10, *Receiving, Labeling, and Handling Environmental Materials Containers*;
and
- SOP FO.13, *Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples*.

5.2.1 Surface-Water Sampling

The appropriate equipment and instrumentation are specified in each of the above SOPs. As discussed previously, the focus of this effort will be to collect surface water from the various drainage pathways and ponding areas. It is anticipated that the surface-water bodies along most of the drainages will be little more than seeps. Therefore, of particular importance are the specifications in SOP SW.03, *Surface Water Sampling*, for sampling under low-flow conditions. Surface-water samples will be collected using Teflon® or stainless-steel beakers attached to handles of an appropriate length to reach the area of maximum flow. Seeps or marshes will be sampled by installing a stainless-steel bowl slightly below water level and collecting the sample from the bowl after the sediment has an opportunity to settle.

Field measurements of temperature, pH, alkalinity, dissolved oxygen, and conductivity will be made in accordance with the specifications in SOP SW.02, *Field Measurement of Surface Water Parameters*, which specifies that (1) temperature will be measured with a thermocouple that can be traced to a National Bureau of Standards (NBS) standard, (2) pH will be measured with a Hach One® pH meter or equivalent, (3) alkalinity will be measured with a Hach Digital Titrator® or equivalent, (4) dissolved oxygen will be measured with either a Yellow Springs Instrument (YSI) dissolved-oxygen meter or equivalent or a Hach DREL 2000® spectrophotometer or equivalent, and (5) conductivity will be measured with a Hach 44600® conductivity meter or equivalent.

5.2.2 Sediment Sampling

The appropriate equipment and instrumentation are specified in the SOPs noted above. Because the sediment samples will be collected along the courses of stormwater control structures and in areas of stormwater overflow and only surface samples are of interest, it is anticipated that all of the sediments will be relatively fine grained. Therefore, it will not be necessary to sieve the samples. The major implements to be used in sediment sample collection are stainless-steel scoops and spoons and stainless-steel pans or bowls. Vegetation will be removed by hand sorting.

Selected sediment samples collected from the drainage ditches will be moist. To ensure the collection of a homogeneous sample for analysis, the procedures outlined in SOP SW.06, *Sediment Sampling*, will be followed. The only sample fraction that will not be mixed before collection will be those collected for analyses of VOCs. The sediment samples will be handled, preserved, labeled, and shipped in accordance with EPA protocols and RFETS SOPs.

5.3 SAMPLE ANALYSES

This section describes the sample handling procedures and analytical program for proposed surface-water and sediment samples collected in the Industrial Area. It also presents requirements for sample designations, analyses, sample containers and preservation, and sample handling and documentation.

5.3.1 Sample Designation

All sediment and surface-water sample designations generated for this program will conform to the input requirements of RFEDS. Each sample designation will contain a nine-character sample number consisting of a two-letter prefix identifying the sample medium (e.g., SE for sediment samples), a unique five-digit number, and a two-letter suffix identifying the contractor. One sample number will be required for each sample generated, including each quality control (QC) sample.

5.3.2 Analytical Requirements

The proposed EPA Level IV analytical methods from the General Radiochemistry and Routine Analytical Services Protocol (GRRASP) (EG&G 1994g) for the surface-water and sediment samples are presented in Tables 5-2 through 5-8. The lists of analytes have been identified for the Industrial Area based on the analytical rationale presented in Section 4.4. The contract-required detection limits (CRDL) for the metals analysis are presented in Table 5-2. These limits of detection are identical to those specified in the GRRASP (EG&G 1994g) and the EPA SOW for inorganic analysis (ILMO3.0). For metals analysis, the CRDLs for all analytes are verified on each instrument by routinely establishing instrument detection limits (IDLs). However, the detection limits for samples may be considerably higher depending on the sample matrix. For organic analyses, the contract-required quantitation limits (CRQL) are presented in Tables 5-3 and 5-4. These quantitation limits

TABLE 5-2
OU12 Field Sampling Plan
Analytical Parameters and Contract-Required Detection Limits (CRDL)
for Surface-Water and Sediment Samples
Metals
Page 1 of 2

Analytical Parameter	Water CRDL	Sediment CRDL
<u>Target Analyte List Metals By EPA-CLP SOW (ILM03.0)</u>	<u>(µg/l)</u>	<u>(mg/kg)</u>
Aluminum	200	40
Antimony	60	12
Arsenic (a)	10	2
Barium	200	40
Beryllium (a)	5	1.0
Cadmium	5	1.0
Calcium	5000	1000
Chromium	10	2.0
Cobalt	50	10
Copper	25	5.0
Cyanide	10	10
Iron	100	20
Lead	5	1.0
Magnesium	5000	1000
Manganese	15	3.0
Mercury	0.2	0.2
Nickel	40	8.0
Potassium	5000	1000
Selenium	5	1.0
Silver	10	2.0
Sodium	5000	1000
Thallium	10	2.0
Vanadium	50	10.0
Zinc	20	4.0

TABLE 5-2
OU12 Field Sampling Plan
Analytical Parameters and Contract-Required Detection Limits (CRDL)
for Surface-Water and Sediment Samples
Metals
Page 2 of 2

Analytical Parameter	Water CRDL	Sediment CRDL
<u>Non-Target Analyte List Metals By EPA-CLP SOW (ILM03.0)</u>	<u>(μg/l)</u>	<u>(mg/kg)</u>
Cesium	1000	200
Lithium	100	20
Molybdenum	200	40
Silicon	100	NA
Strontium	200	40
Tin	200	40
<u>Chromium VI (Hexavalent Cr) By Method SW7196</u>	<u>μg/L</u>	<u>mg/kg</u>
Chromium VI	20	0.10

Notes:

CLP = Contract Laboratory Program
EPA = U.S. Environmental Protection Agency
mg/kg = milligrams per kilogram

SOW = Statement of Work
 μ g/l = micrograms per liter

TABLE 5-3
OUI2 Field Sampling Plan
Analytical Parameters and Contract-Required Quantitation Limits (CRQL)
for Surface-Water and Sediment Samples
Target Compound List Volatiles

Analytical Parameter	Water CRQL	Sediment CRQL
<u>Target Compound List Volatiles by EPA-CLP SOW (OLM01.8)</u>	<u>(µg/l)</u>	<u>(mg/kg)</u>
Chloromethane		
Bromomethane	10	10
Vinyl Chloride (a)	10	10
Chloroethane	10	10
Methylene Chloride	10	10
Acetone	10	10
Carbon Disulfide	10	10
1,1-Dichloroethene(a)	10	10
1,1-Dichloroethane	10	10
1,2-Dichloroethene (Total)	10	10
Chloroform(a)	10	10
1,2-Dichloroethane(a)	10	10
2-Butanone	10	10
1,1,1-Trichloroethane(a)	10	10
Carbon Tetrachloride(a)	10	10
Bromodichloromethane(a)	10	10
1,2-Dichloropropane(a)	10	10
cis-1,3-Dichloropropene(a)	10	10
Trichloroethene(a)	10	10
Dibromochloromethane(a)	10	10
1,1,2-Trichloroethane	10	10
Benzene(a)	10	10
trans-1,3-Dichloropropene(a)	10	10
Bromoform(a)	10	10
4-Methyl-2-pentanone	10	10
2-Hexanone	10	10
Tetrachloroethene(a)	10	10
Toluene	10	10
1,1,2,2-Tetrachloroethane(a)	10	10
Chlorobenzene	10	10
Ethylbenzene	10	10
Styrene	10	10
Total Xylenes	10	10
	10	10

Notes:

CLP = Contract Laboratory Program
EPA = U.S. Environmental Protection Agency
mg/kg = milligrams per kilogram

SOW = Statement of Work
µg/l = micrograms per liter

TABLE 5-4
OUI2 Field Sampling Plan
Analytical Parameters and Contract-Required Quantitation Limits (CRQL)
for Surface-Water and Sediment Samples
BNAs
Page 1 of 2

Analytical Parameter	Water CRQL	Sediment CRQL
<u>BNA by EPA-CLP SOW (OLM01.8)</u>	<u>(µg/l)</u>	<u>(µg/kg)</u>
Phenol	10	330
2-Chloroethylether, bis-	10	330
2-Chlorophenol	10	330
1,3-Dichlorobenzene	10	330
1,4-Dichlorobenzene	10	330
1,2-Dichlorobenzene	10	330
2-Methylphenol	10	330
1-Chloropropane, 2,2'-oxybis-	10	330
4-Methylphenol	10	330
Nitrosodi-n-propylamine, N-	10	330
Hexachloroethane	10	330
Nitrobenzene	10	330
Isophorone	10	330
2-Nitrophenol	10	330
2,4-Dimethylphenol	10	330
2-Chloroethoxymethane, bis-	10	330
2,4-Dichlorophenol	10	330
1,2,4-Trichlorobenzene	10	330
Naphthalene	10	330
4-Chloroaniline	10	330
Hexachlorobutadiene	10	330
4-Chloro-3-methylphenol	10	330
2-Methylnaphthalene	10	330
Hexachlorocyclopentadiene	10	330
2,4,6-Trichlorophenol	10	330
2,4,5-Trichlorophenol	25	800
2-Chloronaphthalene	10	330
2-Nitroaniline	25	800
Dimethylphthalate	10	330
Acenaphthylene	10	330
2,6-Dinitrotoluene	10	330
3-Nitroaniline	25	800
Acenaphthene	10	330
2,4-Dinitrophenol	25	800
4-Nitrophenol	25	800
Dibenzofuran	10	330
2,4-Dinitrotoluene	10	330

TABLE 5-4
OU12 Field Sampling Plan
Analytical Parameters and Contract-Required Quantitation Limits (CRQL)
for Surface-Water and Sediment Samples
BNAs
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Analytical Parameter	Water CRQL	Sediment CRQL
Diethylphthalate	10	330
4-Chlorophenylphenylether	10	330
Fluorene	10	330
4-Nitroaniline	25	800
4,6-Dinitro-2-methylphenol	25	800
Nitroso-diphenylamine, N-	10	330
4-Bromophenylphenylether	10	330
Hexachlorobenzene	10	330
Pentachlorophenol	25	800
Phenanthrene	10	330
Anthracene	10	330
Carbazole	10	330
Di-n-butylphthalate	10	330
Fluoranthene	10	330
Pyrene	10	330
Butylbenzylphthalate	10	330
3,3'-Dichlorobenzidine	10	330
Benzo(a)anthracene	10	330
Chrysene	10	330
2-Ethylhexylphthalate, bis-	10	330
Di-n-octylphthalate	10	330
Benzo(b)fluoranthene	10	330
Benzo(k)fluoranthene	10	330
Benzo(a)pyrene	10	330
Indeno(1,2,3-cd)pyrene	10	330
Dibenz(a,h)anthracene	10	330
Benzo(g,h,i)perylene	10	330

Notes:

BNA = base/neutral acid
CLP = Contract Laboratory Program
EPA = U.S. Environmental Protection Agency
SOW = Statement of Work
 $\mu\text{g/l}$ = micrograms per liter
 $\mu\text{g/kg}$ = micrograms per kilogram

TABLE 5-5
OU12 Field Sampling Plan
Analytical Parameters and Contract-Required Quantitation Limits (CRQL)
for Surface-Water and Sediment Samples
Pesticides/PCB

Analytical Parameter	Water CRQL	Sediment CRQL
<u>Pesticides/PCB by EPA-CLP SOW (2/88)</u>	<u>($\mu\text{g/l}$)</u>	<u>($\mu\text{g/kg}$)</u>
BHC, alpha-	0.050	1.7
BHC, beta-	0.050	1.7
BHC, delta-	0.050	1.7
BHC, gamma- (Lindane)	0.050	1.7
Heptachlor	0.050	1.7
Aldrin	0.050	1.7
Heptachlor epoxide	0.050	1.7
Endosulfan I	0.050	1.7
Dieldrin	0.10	3.3
4,4'-DDE	0.10	3.3
Endrin	0.10	3.3
Endosulfan II	0.10	3.3
4,4'-DDD	0.10	3.3
Endosulfan sulfate	0.10	3.3
4,4'-DDT	0.10	3.3
Methoxychlor	0.50	17.0
Endrin ketone	0.10	3.3
Endrin aldehyde	0.10	3.3
Chlordane, alpha-	0.050	1.7
Chlordane, gamma-	0.050	1.7
Toxaphene	5.0	170.0
Aroclor-1016	1.0	33.0
Aroclor-1221	2.0	67.0
Aroclor-1232	1.0	33.0
Aroclor-1242	1.0	33.0
Aroclor-1248	1.0	33.0
Aroclor-1254	1.0	33.0
Aroclor-1260	1.0	33.0

Notes:

CLP = Contract Laboratory Program
DDD = dichlorodiphenyldichloroethane
DDE = dichlorodiphenyldichloroethene
DDT = dichlorodiphenyltrichloroethane

EPA = U.S. Environmental Protection Agency
SOW = Statement of Work
 $\mu\text{g/l}$ = micrograms per liter
 $\mu\text{g/kg}$ = micrograms per kilogram

TABLE 5-6
OU12 Field Sampling Plan
Analytical Parameters and Required Detection Limits (RDL)
for Surface-Water and Sediment Samples
Radionuclides

Analytical Parameter	Water RDL	Sediment RDL
<u>Radionuclides (RDL)</u>	<u>(pCi/l)</u>	<u>(dry)(pCi/g)</u>
Gross Alpha	2	4
Gross Beta	4	10
Uranium 233/234, 235 (a), and 238 (each isotope)	0.6	0.3
Americium 241	0.01	0.02
Plutonium 239/240	0.01	0.03
Tritium	400	400 (pCi/ml)
Cesium 137	1	0.5
Strontium 89/90	1	1

Table 5-7
OU12 Field Sampling Plan
Analytical Parameters and Method Detection Limits (MDL)
for Surface-Water and Sediment Samples
Anions

Analytical Parameter	Water MDL	Sediment MDL
<u>Anions by Method E300.0</u>	<u>(mg/l)</u>	<u>(mg/kg)</u>
Nitrate as N	5	2.5
Nitrite as N	5	2.5
Sulfate	5	2.5
Chloride	5	2.5
Fluoride	0.1	2.5
pH at 25°C	0.1 pH unit	0.1 pH unit
Specific Conductance at 25°C	10µmhos/cm	NA
Total Organic Carbon by Method E415.1	0.1 µg/l	0.5 mg/kg
Dissolved Oxygen(b)	NA	NA
Temperature(b)	NA	NA
Alkalinity(b)	NA	NA

Notes: (for Tables 5-6 and 5-7)

(a) = Human Health risk-based preliminary
remediation goals are lower than
detection limit or quantitation limits.
(b) = field measurements
mg/kg = milligrams per kilogram
NA = not applicable

pCi/g = picocuries per gram
°C = degrees centigrade
µg/kg = micrograms per kilogram
µg/l = micrograms per liter
µmhos/cm = microhos per centimeter

TABLE 5-8
OU12 Field Sampling Plan
Analytical Parameters and Method Detection Limits (MDL)
for Surface-Water Samples
Chlorinated Herbicides

Analytical Parameter	Water MDL
<u>Chlorinated Herbicides by EPA Method 615</u>	<u>($\mu\text{g/l}$)</u>
Dalapon	5.80
Dicamba	0.27
Dichlorophenoxyacetic Acid (2,4-D)	1.20
Dichlorophenoxybutanoic Acid (2,4-DB)	0.91
Dichlorophenoxypropionic Acid	0.65
Dinoseb	0.07
MCPA	249
MCPP	192
Trichlorophenoxyacetic Acid (2,4,5-T)	0.20
Trichlorophenoxypropionic Acid (2,4,5-TP)	0.17

Notes:

EPA = U.S. Environmental Protection Agency
MDL = method detection limit
 $\mu\text{g/l}$ = micrograms per liter

Notes: The actual sample detection and quantitation limits are highly matrix dependent and may be elevated as a result. The limits listed here are the minimum achievable under ideal conditions. Actual limits may be higher.

are identical to those specified in the GRRASP (EG&G 1994g) and the EPA-CLP SOW for organic analysis (OLM01-8). Quantitation limits are highly dependent on sample matrix. The quantitation limits listed in Tables 5-2 through 5-8 are provided as guidance and may not always be achievable. Sample detection limits will be based on a dry-weight basis for sediment and will be higher than those listed in Tables 5-2 through 5-8.

The required detection limits (RDL) as established in the GRRASP (EG&G 1994g) are presented in Table 5-6 for the radionuclide parameters. In addition, all non-CLP methods listed reference the method detection limits (MDL) found in the GRRASP (EG&G 1994g). Method detection or quantitation limits that do not meet preliminary remediation goals (PRGs) are noted in Tables 5-2 through 5-8.

The holding time for hexavalent chromium analysis of water samples is 24 hours. Because there are requirements for screening samples for radioactivity before they are shipped offsite, it is not feasible to meet the hexavalent chromium analysis holding time for water samples. Onsite laboratory capabilities for hexavalent chromium are not currently available. Water samples will not be analyzed for hexavalent chromium.

5.3.3 Sample Containers and Preservation

Sample volume requirements, preservation techniques, holding times, and container material requirements are specific to the analysis and to the surface-water and sediment media. Table 5-9 lists the types of analyses for the surface-water and sediment samples, associated container size, preservatives, and holding times. Additional guidance for appropriate use of containers and preservative is provided in SOP FO.13, *Containerizing, Preserving, Handling, and Shipping of Soil and Water Samples* (EG&G 1994f), which will be followed during this sampling program.

TABLE 5-9
OUI2 Field Sampling Plan
Sample Containers, Preservation, and Holding Times
for Sediment and Surface Water

SEDIMENT SAMPLES			
Parameter	Container	Preservative	Holding Time
TAL and Non-TAL Metals	1 x 250 mL wide-mouth glass jar	Cool, 4°C	180 days ¹
TCL Volatiles	2 x 125 mL wide-mouth Teflon-lined jar	Cool, 4°C	7 days
Pesticides/PCBs	1 x 9 oz. wide-mouth Teflon-lined glass vials	Cool, 4°C	7 days until extraction, 40 days after extraction
Herbicides	1 x 9 oz. wide-mouth Teflon-lined glass vials	Cool, 4°C	7 days until extraction, 40 days after extraction
Radionuclides	1 x 1 L wide-mouth glass jar	None	180 days
TOC, Anions, pH, and Specific Conductance	1 x 250 mL wide-mouth glass jar	Cool, 4°C	28 days
SURFACE WATER SAMPLES			
Parameter	Container	Preservative	Holding Time
TAL Metals	1 x 1 L polyethylene bottle	Nitric acid pH <2; Cool, 4°C	180 days ¹
TCL Volatiles	2 x 40 mL VOA vials with Teflon-lined septum lids	Cool, 4°C	7 days
Pesticides/PCBs	1 x 4 L amber glass bottle	Cool, 4°C	7 days until extraction, 40 days after extraction
Herbicides	1 x 4 L amber glass bottle	Cool, 4°C	7 days until extraction, 40 days after extraction
Radionuclides	12 L polyethylene bottle(s)	Nitric acid pH <2	180 days
TOC	1 x 250 mL polyethylene bottle	Sulfuric acid pH <2; Cool, 4°C	28 days
Anions	1 x 1 L polyethylene bottle	Cool, 4°C	28 days
Nitrate/Nitrite	1 x 250 mL polyethylene bottle	Sulfuric acid pH <2; Cool, 4°C	28 days
pH, Temperature, and Specific Conductance	In situ, beaker or bucket	None	Analyze immediately

Notes:

¹ Holding time for mercury is 28 days.
L = liter
mL = milliliter
oz = ounce

PCB = polychlorinated biphenyl
TAL = target analyte list
TCL = target compound list
TOC = total organic carbon
°C = degrees Celsius

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5.3.4 Sample Handling and Documentation

Sample handling and documentation procedures are necessary to ensure the defensibility of data and to verify the quality and quantity of work performed in the field. Accountability documents include logbooks, data-collection forms, sample labels or tags, chain-of-custody records, field data documentation, and analytical records or reports. Information pertaining to documentation of samples, packaging, and shipping is provided in SOP FO.13 (EG&G 1994f), which will be followed during this sampling program.

5.3.5 Data Validation

Data validation will be conducted on surface-water and sediment sample data, in accordance with the *Site-Wide Quality Assurance Project Plan* (EG&G 1991b). Data validation activities will consist of reviewing and verifying laboratory data and evaluating the verified data for data quality.

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Approved By:

Director (Date)

Suzanne German Smith 1/24/95
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Stephens 1/26/85
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6.0 FIELD SAMPLING PLAN SCHEDULE

The proposed FSP schedule is shown in Figure 6-1. The schedule incorporates subcontractor coordination, field sampling activities, laboratory analyses, data evaluation and data validation. The schedule is based on the following assumptions:

- DOE, EG&G, EPA, and CDPHE concur and approve of the Final Technical Memorandum FSP (this document) by January 6, 1995.
- Funding for the project is available from DOE.
- All subcontracting, procurement, and funding is obtained by the end of January, 1995.
- There are no conflicts with other surface-water and sediment collection programs.
- There are no unforeseen security constraints or audits that would affect the sampling program.
- Sediment sampling will begin on 01 February 1995 before clean-out/maintenance activities.

FIGURE 6-1
FINAL PHASE I
SAMPLING SCHEDULE

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- Weather conditions are favorable to collect representative sediment samples.
- Laboratory subcontractor provides 65-day turnaround reporting results of analyses for all chemical parameters.
- Data are usable for initial Phase I interpretation and environmental evaluation before data validation.
- No resampling because of laboratory QC problems.
- Data validation and incorporation of data into RFEDS requires 160 days.
- Validated data, needed for full environmental evaluation data, will be available 30 days after incorporation into RFEDS as fully validated data.

1/27/95

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Project Manager (Date)

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Quality Assurance Program Manager (Date)

Sample-location numbers are assigned in blocks by request to the EG&G Sample Management Office. After sampling begins, field data will be input to RFEDS using DATACAP remote entry module supplied by EG&G. Data will be entered on a daily basis, and a 3.5-inch computer diskette will be delivered to EG&G on a weekly basis. Data from the system will be available to the contractor immediately after the weekly update. A hard copy report will be generated from the module for contractor use. The data will undergo a prescribed QC based on SOP FO.14, *Field Data Management* (EG&G 1994f).

The contractor will maintain a database for field data that are collected during screening tasks. The contractor will provide 3.5-inch diskettes and hard copies to EG&G for their use.

A sample-tracking spreadsheet will be maintained by the contractor for use in tracking sample collection and shipment. The sample-tracking spreadsheet will be updated weekly and will be available to EG&G in hardcopy or on a 3.5-inch computer diskette. These data will also be delivered to EG&G on 3.5-inch computer diskettes. Computer hardware and software requirements for contractors using government-supplied equipment will be supplied by EG&G. Computer and data security measures will also follow acceptable procedures outlined by EG&G in SOP FO.14. Data management will follow RFEDS procedures in effect at the time this fieldwork is implemented.

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Results of laboratory analyses will be loaded into RFEDS based on a separate contract between the analytical laboratories and EG&G. Data will be extracted from RFEDS to analyze and interpret the data for reporting. Sample data from the existing or proposed programs identified in Section 3.0 that meet the DQOs established for this Technical Memorandum will also be extracted from RFEDS and will be managed and reported in the same manner as the data collected as part of this Field Sampling Plan.

Forms provided in the various SOPs applicable to this project will also be used as appropriate to document and manage the data obtained.

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Sample duplicates, field preservation blanks, and equipment rinsate blanks will be prepared. The analytical results obtained for the surface-water and sediment samples will be used by the contractor to assess the quality of the field sampling. The types of field QC samples that will be collected and their application are discussed below. The frequency of QC samples collection and analysis is summarized in Table 8-1.

Duplicate samples will be collected by the sampling team for use as a relative measure of the precision of the sample collection process. Duplicate samples will be collected from the same location as the primary sample. Duplicate samples will be collected using the same procedures and equipment and in the same types of containers as required for the primary samples. The duplicate samples will be preserved in the same manner and submitted for the same analyses required for the primary samples.

Field blanks will consist of de-ionized or distilled water and will be prepared by the sampling team to provide an indication of contamination introduced during sample preparation.

Equipment or rinsate blanks will be collected from the final decontamination rinse waters to evaluate the adequacy of the determination procedures for sample collection equipment

TABLE 8-1
OU12 Field Sampling Plan
Field Quality Control Sample Frequency

Sample Type	Type of Analysis	Sample Frequency	
		Solids	Liquids
Duplicates	Organics	1/10	1/10
	Inorganics	1/10	1/10
	Radionuclides	1/10	1/10
Field Blanks	Organics		1/20
	Inorganics		1/20
	Radionuclides		1/20
Equipment Blanks	Organics	1/Day or 1/20	1/Day or 1/20
	Inorganics	1/Day or 1/20	1/Day or 1/20
	Radionuclides	1/Day or 1/20	1/Day or 1/20
Trip Blanks	Volatile Organics		1 per shipping container

1/10 = one Quality Control sample for every 10 samples collected

For equipment blanks, samples will be collected once each day or once for every 20 samples, whichever is more frequent.

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performed by the sampling team. Equipment blanks will be collected by rinsing decontaminated equipment with distilled water before sample collection. The blank sample will be collected and placed in the appropriate sample containers.

Trip blanks are used to assess the potential for cross contamination of VOCs within sample containers used during storage, sample collection, and transport activities. Trip blanks consist of American Society for Testing and Materials (ASTM) Type II reagent-grade water and are prepared by the analytical laboratory. Trip blanks will be shipped to the sampling site with the empty sample containers and transported back to the laboratory with the samples. Trip blanks will remain unopened throughout the sampling event. Trip blanks will be prepared and analyzed for VOCs by the laboratory along with the other samples.

Comprehensive procedures for field QC and data usability are provided in *Rocky Flats Plant Site-Wide Quality Assurance Project Plan* (EG&G 1991b) including control of measuring and test equipment, sample handling, storage and shipping, and reporting requirements.

INFORMATION ONLY

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APPENDIX A

SUMMARY STATISTICS FOR SEDIMENT DATA -
DETECTS ONLY
FROM
ROCKY FLATS ENVIRONMENTAL
DATABASE SYSTEM (RFEDS)

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED009

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	5	9,130.00	1,700.00	5,022.00	3,621.59	8,788.45	21,387.27
ARSENIC	mg/kg	5	4.10	1.10	2.26	1.39	3.70	10.13
BARIUM	mg/kg	5	143.00	24.90	75.72	52.60	130.42	253.82
BERYLLIUM	mg/kg	4	0.90	0.20	0.45	0.32	0.77	11.65
CADMIUM	mg/kg	1	1.30	1.30	1.30			2.55
CALCIUM	mg/kg	5	14,600.00	1,880.00	6,476.00	5,633.09	12,334.41	18,446.12
CHROMIUM	mg/kg	4	10.20	2.20	6.35	4.40	10.92	31.88
COBALT	mg/kg	5	8.20	2.40	5.20	2.36	7.66	16.43
COPPER	mg/kg	5	14.80	6.20	10.18	3.97	14.31	36.78
IRON	mg/kg	5	14,500.00	6,130.00	9,500.00	3,759.67	13,410.06	28,612.98
LEAD	mg/kg	5	21.50	4.70	11.20	6.99	18.47	138.09
LITHIUM	mg/kg	5	5.70	1.80	3.54	1.94	5.56	41.01
MAGNESIUM	mg/kg	5	2,660.00	721.00	1,451.80	940.55	2,429.97	5,358.56
MANGANESE	mg/kg	5	1,700.00	241.00	882.00	558.49	1,462.83	907.35
MOLYBDENUM	mg/kg	2	4.60	3.60	4.10	0.71	4.84	31.75
NICKEL	mg/kg	5	14.80	3.20	8.70	4.71	13.60	24.16
POTASSIUM	mg/kg	5	1,510.00	402.00	838.80	560.33	1,421.55	3,159.74
SELENIUM	mg/kg	1	0.35	0.35	0.35			2.18
SILICON	mg/kg	5	689.00	241.00	380.40	189.32	577.29	1,741.79
SODIUM	mg/kg	5	298.00	60.30	132.02	101.28	237.35	593.09
STRONTIUM	mg/kg	5	49.90	5.50	24.40	19.42	44.60	291.42
TIN	mg/kg	2	8.30	4.50	6.40	2.69	9.19	40.57
VANADIUM	mg/kg	5	27.60	6.70	14.70	9.29	24.36	63.39
ZINC	mg/kg	5	158.00	32.10	95.44	54.62	152.24	139.04

CHEMICAL GROUP: ORGANICS

2-METHYLNAPHTHALENE	µg/kg	1	58.00	58.00	58.00			
ACENAPHTHENE	µg/kg	1	320.00	320.00	320.00			
ACETONE	µg/kg	2	140.00	16.00	78.00	87.68	169.19	
ANTHRACENE	µg/kg	3	370.00	79.00	176.00	168.01	350.73	
BENZO(a)ANTHRACENE	µg/kg	4	590.00	55.00	241.25	237.71	488.47	
BENZO(a)PYRENE	µg/kg	3	440.00	150.00	246.67	167.43	420.80	
BENZO(b)FLUORANTHENE	µg/kg	3	390.00	160.00	236.67	132.79	374.77	
BENZO(ghi)PERYLENE	µg/kg	1	460.00	460.00	460.00			
BENZO(k)FLUORANTHENE	µg/kg	3	250.00	120.00	163.33	75.06	241.39	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	4	650.00	100.00	425.00	272.34	708.23	
CHRYSENE	µg/kg	4	610.00	70.00	250.00	243.72	503.47	
DI-n-BUTYL PHTHALATE	µg/kg	2	62.00	51.00	56.50	7.78	64.59	
DIBENZO(a,h)ANTHRACENE	µg/kg	1	290.00	290.00	290.00			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED009

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
DIBENZOFURAN	µg/kg	1	120.00	120.00	120.00			
FLUORANTHENE	µg/kg	4	1,600.00	130.00	552.50	700.26	1,280.77	
FLUORENE	µg/kg	1	250.00	250.00	250.00			
INDENO(1,2,3-cd)PYRENE	µg/kg	1	410.00	410.00	410.00			
METHYLENE CHLORIDE	µg/kg	3	39.00	17.00	26.33	11.37	38.16	
NAPHTHALENE	µg/kg	1	120.00	120.00	120.00			
PHENANTHRENE	µg/kg	4	1,700.00	72.00	603.00	740.62	1,373.24	
PYRENE	µg/kg	4	1,300.00	110.00	592.50	502.88	1,115.50	
SUB.BENZENEDICARBOXYLIC A	µg/kg	1	500.00	500.00	500.00			
SUB.HEXANEDIOIC ACID	µg/kg	1	200.00	200.00	200.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	4	0.39	0.02	0.20	0.16	0.37	1.77
CESIUM-134	pCi/g	1	0.09	0.09	0.09			
CESIUM-137	pCi/g	5	0.10	0.00	0.05	0.04	0.08	1.54
GROSS ALPHA	pCi/g	5	67.00	3.61	19.55	26.79	47.41	87.54
GROSS BETA	pCi/g	5	38.00	7.19	22.01	13.99	36.56	66.83
PLUTONIUM-239/240	pCi/g	4	1.30	0.19	0.73	0.52	1.27	5.62
RADIUM-226	pCi/g	5	0.90	0.54	0.65	0.15	0.80	2.22
RADIUM-228	pCi/g	5	1.96	0.82	1.38	0.53	1.93	4.55
STRONTIUM-89,90	pCi/g	5	0.47	0.01	0.15	0.20	0.36	1.07
TRITIUM	pCi/L	4	1,000.00	-33.30	350.63	450.48	819.13	1,030.59
URANIUM-233,-234	pCi/g	5	1.50	0.16	0.96	0.52	1.50	5.29
URANIUM-235	pCi/g	5	0.09	0.00	0.05	0.04	0.09	0.21
URANIUM-238	pCi/g	5	1.52	0.13	1.01	0.59	1.62	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	5	86.60	63.30	73.52	8.55	82.41	
ALKALINITY AS CaCO3	mg/kg	2	6,200.00	5,400.00	5,800.00	565.69	6,388.31	19,839.86
NITRATE/NITRITE	mg/kg	2	27.70	4.20	15.95	16.62	33.23	57.19
pH	pH	5	8.20	7.30	7.62	0.36	7.99	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED011

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CHEMICAL GROUP: METALS								
ALUMINUM	mg/kg	8	14,900.00	1,930.00	8,230.00	3,942.55	12,330.25	21,387.27
ANTIMONY	mg/kg	1	4.30	4.30	4.30			17.68
ARSENIC	mg/kg	8	8.40	1.10	4.31	2.07	6.47	10.13
BARIUM	mg/kg	8	141.00	42.90	102.63	34.10	138.09	253.82
BERYLLIUM	mg/kg	7	1.00	0.31	0.51	0.23	0.75	11.65
CADMIUM	mg/kg	2	1.00	0.79	0.90	0.15	1.05	2.55
CALCIUM	mg/kg	8	39,800.00	6,370.00	21,417.50	12,203.19	34,108.82	18,446.12
CESIUM	mg/kg	1	1.80	1.80	1.80			442.39
CHROMIUM	mg/kg	8	14.40	1.90	7.80	3.68	11.63	31.88
COBALT	mg/kg	8	9.50	2.10	5.23	2.26	7.57	16.43
COPPER	mg/kg	8	14.70	5.10	11.19	3.16	14.48	36.78
IRON	mg/kg	8	19,700.00	5,270.00	11,880.00	4,557.51	16,619.82	28,612.98
LEAD	mg/kg	8	26.70	6.00	16.48	5.93	22.64	138.09
LITHIUM	mg/kg	7	9.50	1.90	5.86	2.29	8.24	41.01
MAGNESIUM	mg/kg	8	3,240.00	822.00	2,200.25	748.43	2,978.62	5,358.56
MANGANESE	mg/kg	8	290.00	121.00	175.38	51.41	228.84	907.35
MOLYBDENUM	mg/kg	3	4.50	4.10	4.23	0.23	4.47	31.75
NICKEL	mg/kg	6	14.00	3.40	9.87	3.71	13.72	24.16
POTASSIUM	mg/kg	8	1,780.00	321.00	1,139.25	443.52	1,600.51	3,159.74
SELENIUM	mg/kg	3	0.43	0.26	0.37	0.09	0.46	2.18
SILICON	mg/kg	7	589.00	79.20	289.46	151.69	447.22	1,741.79
SILVER	mg/kg	3	2.00	0.79	1.36	0.61	2.00	3.11
SODIUM	mg/kg	8	330.00	74.90	171.84	86.07	261.35	593.09
STRONTIUM	mg/kg	8	76.70	12.80	54.53	21.86	77.26	291.42
TIN	mg/kg	2	11.30	4.60	7.95	4.74	12.88	40.57
VANADIUM	mg/kg	8	41.10	9.60	25.50	10.49	36.41	63.39
ZINC	mg/kg	8	507.00	29.00	243.76	163.19	413.48	139.04

CHEMICAL GROUP: ORGANICS

ACENAPHTHENE	µg/kg	1	56.00	56.00	56.00			
ACETONE	µg/kg	3	35.00	6.00	21.67	14.64	36.89	
Aldol Condensation	µg/kg	2	4,200.00	3,200.00	3,700.00	707.11	4,435.39	
AROCLOR-1254	µg/kg	9	850.00	77.00	478.44	333.49	825.27	
BENZO(a)ANTHRACENE	µg/kg	3	95.00	77.00	88.00	9.64	98.03	
BENZO(a)PYRENE	µg/kg	1	95.00	95.00	95.00			
BENZO(b)FLUORANTHENE	µg/kg	2	110.00	66.00	88.00	31.11	120.36	
BENZO(k)FLUORANTHENE	µg/kg	2	97.00	67.00	82.00	21.21	104.06	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	4	160.00	88.00	132.00	31.87	165.15	
CHRYSENE	µg/kg	3	120.00	80.00	98.00	20.30	119.11	

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED011

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
DI-n-BUTYL PHTHALATE	µg/kg	2	74.00	58.00	66.00	11.31	77.77	
FLUORANTHENE	µg/kg	5	240.00	61.00	150.40	78.26	231.79	
Hexadecanoic Acid	µg/kg	2	2,300.00	280.00	1,290.00	1,428.36	2,775.49	
HEXADECENOIC ACID	µg/kg	1	700.00	700.00	700.00			
INDENO(1,2,3-cd)PYRENE	µg/kg	2	74.00	61.00	67.50	9.19	77.06	
METHYLENE CHLORIDE	µg/kg	3	40.00	4.00	18.33	19.09	38.18	
NAPHTHALENE	µg/kg	1	59.00	59.00	59.00			
PHENANTHRENE	µg/kg	5	240.00	53.00	130.80	80.63	214.66	
PYRENE	µg/kg	5	240.00	81.00	151.20	67.97	221.89	
Stigmast-5-en-3-ol, (3.beta.	µg/kg	1	680.00	680.00	680.00			
SUB.BENZENEDICARBOXYLIC A	µg/kg	2	600.00	500.00	550.00	70.71	623.54	
SUB.HEXANEDIOIC ACID	µg/kg	1	10,000.00	10,000.00	10,000.00			
TETRACHLOROETHENE	µg/kg	3	7.00	3.00	4.67	2.08	6.83	
Tetradecanoic acid, tetradec	µg/kg	1	610.00	610.00	610.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	8	0.33	0.02	0.19	0.11	0.30	1.77
CESIUM-134	pCi/g	2	0.12	0.12	0.12	0.00	0.12	
CESIUM-137	pCi/g	8	0.17	0.03	0.08	0.05	0.12	1.54
GROSS ALPHA	pCi/g	8	160.00	4.23	42.54	55.70	100.47	87.54
GROSS BETA	pCi/g	8	64.00	5.12	28.75	16.34	45.75	66.83
PLUTONIUM-239/240	pCi/g	8	0.45	0.04	0.21	0.12	0.33	5.62
RADIUM-226	pCi/g	9	1.15	0.36	0.79	0.24	1.04	2.22
RADIUM-228	pCi/g	9	2.90	0.00	1.43	0.76	2.22	4.55
STRONTIUM-89,90	pCi/g	7	1.06	0.05	0.28	0.36	0.65	1.07
TRITIUM	pCi/L	7	1,000.00	60.71	316.20	322.32	651.41	1,030.59
URANIUM-233,-234	pCi/g	9	2.40	0.41	1.07	0.59	1.68	5.29
URANIUM-235	pCi/g	9	0.08	0.00	0.04	0.03	0.07	0.21
URANIUM-238	pCi/g	9	2.00	0.40	0.97	0.48	1.47	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	6	85.10	61.00	68.97	10.18	79.55	
ALKALINITY AS CaCO3	mg/kg	6	6,200.00	1,300.00	4,100.00	1,770.88	5,941.71	19,839.86
BICARBONATE AS CaCO3	mg/kg	2	2,890.00	2,580.00	2,735.00	219.20	2,962.97	18,993.76
CARBONATE AS CaCO3	mg/kg	2	143.00	119.00	131.00	16.97	148.65	
NITRATE/NITRITE	mg/kg	2	3.00	1.70	2.35	0.92	3.31	57.19
pH	pH	8	8.60	7.00	7.88	0.48	8.38	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED028

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CHEMICAL GROUP: METALS								
ALUMINUM	mg/kg	3	18,000.00	12,000.00	15,133.33	3,008.88	18,262.56	21,387.27
ARSENIC	mg/kg	3	7.20	5.00	6.20	1.11	7.36	10.13
BARIUM	mg/kg	3	214.00	162.00	185.33	26.41	212.80	253.82
BERYLLIUM	mg/kg	3	1.10	0.79	0.96	0.16	1.12	11.65
CADMIUM	mg/kg	1	0.86	0.86	0.86			2.55
CALCIUM	mg/kg	3	27,100.00	16,000.00	19,900.00	6,242.60	26,392.30	18,446.12
CHROMIUM	mg/kg	3	18.30	10.00	14.27	4.15	18.59	31.88
COBALT	mg/kg	3	10.00	7.80	8.67	1.17	9.89	16.43
COPPER	mg/kg	3	22.50	18.10	20.53	2.24	22.86	36.78
IRON	mg/kg	3	22,300.00	17,000.00	19,833.33	2,668.96	22,609.05	28,612.98
LEAD	mg/kg	3	23.10	20.40	21.83	1.36	23.25	138.09
LITHIUM	mg/kg	4	14.00	12.00	12.90	1.05	13.99	41.01
MAGNESIUM	mg/kg	3	4,510.00	3,600.00	4,146.67	481.91	4,647.85	5,358.56
MANGANESE	mg/kg	3	268.00	212.00	240.00	28.00	269.12	907.35
NICKEL	mg/kg	3	18.80	15.00	17.53	2.19	19.82	24.16
POTASSIUM	mg/kg	3	2,240.00	1,700.00	2,013.33	280.24	2,304.78	3,159.74
SELENIUM	mg/kg	2	0.63	0.41	0.52	0.16	0.68	2.18
SILICON	mg/kg	3	1,740.00	342.00	1,025.33	699.53	1,752.84	1,741.79
SODIUM	mg/kg	3	225.00	183.00	209.33	22.94	233.19	593.09
STRONTIUM	mg/kg	4	97.30	72.10	80.35	11.45	92.26	291.42
TIN	mg/kg	1	13.90	13.90	13.90			40.57
VANADIUM	mg/kg	3	42.50	31.00	38.30	6.35	44.90	63.39
ZINC	mg/kg	3	94.00	81.00	86.97	6.57	93.79	139.04

CHEMICAL GROUP: ORGANICS								
2-BUTANONE	µg/kg	1	16.00	16.00	16.00			
4-METHYLPHENOL	µg/kg	2	110.00	110.00	110.00	0.00	110.00	
ACETONE	µg/kg	1	130.00	130.00	130.00			
ALDRIN	µg/kg	1	0.00	0.00	0.00			
alpha-CHLORDANE	µg/kg	1	0.00	0.00	0.00			
AROCLOR-1254	µg/kg	2	46.00	40.00	43.00	4.24	47.41	
beta-BHC	µg/kg	1	0.00	0.00	0.00			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	4	130.00	87.00	108.50	24.83	134.32	
delta-BHC	µg/kg	1	0.00	0.00	0.00			
DI-n-BUTYL PHTHALATE	µg/kg	1	57.00	57.00	57.00			
ENDOSULFAN I	µg/kg	1	0.00	0.00	0.00			
gamma-CHLORDANE	µg/kg	1	0.00	0.00	0.00			
HEPTACHLOR	µg/kg	1	0.00	0.00	0.00			
HEPTACHLOR EPOXIDE	µg/kg	1	0.00	0.00	0.00			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED028

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
METHYLENE CHLORIDE	µg/kg	1	19.00	19.00	19.00			
PYRENE	µg/kg	2	61.00	61.00	61.00	0.00	61.00	

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	2	0.04	0.04	0.04	0.00	0.04	1.77
CESIUM-134	pCi/g	1	0.07	0.07	0.07			
CESIUM-137	pCi/g	3	0.10	0.07	0.09	0.02	0.10	1.54
GROSS ALPHA	pCi/g	3	9.48	2.43	5.99	3.53	9.66	87.54
GROSS BETA	pCi/g	3	26.46	6.17	13.84	11.02	25.29	66.83
PLUTONIUM-239/240	pCi/g	2	0.18	0.12	0.15	0.04	0.19	5.62
RADIUM-226	pCi/g	3	1.50	0.95	1.26	0.28	1.55	2.22
RADIUM-228	pCi/g	3	2.50	1.06	1.89	0.75	2.67	4.55
STRONTIUM-89,90	pCi/g	2	0.12	-0.30	-0.09	0.30	0.22	1.07
TRITIUM	pCi/L	3	1,000.00	17.61	426.12	511.65	958.23	1,030.59
URANIUM-233,-234	pCi/g	3	1.12	0.25	0.65	0.44	1.11	5.29
URANIUM-235	pCi/g	3	0.05	0.01	0.03	0.02	0.05	0.21
URANIUM-238	pCi/g	3	1.09	0.25	0.64	0.42	1.08	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	3	67.50	50.00	57.47	9.03	66.86	
ALKALINITY AS CaCO3	mg/kg	3	20,000.00	5,900.00	11,666.67	7,392.11	19,354.46	19,839.86
NITRATE/NITRITE	mg/kg	3	3.80	2.00	2.63	1.01	3.69	57.19
pH	pH	3	8.00	7.10	7.57	0.45	8.04	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED029

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CHEMICAL GROUP: METALS								
ALUMINUM	mg/kg	6	18,100.00	8,560.00	13,693.33	3,576.85	17,413.26	21,387.27
ANTIMONY	mg/kg	1	4.90	4.90	4.90			17.68
ARSENIC	mg/kg	6	5.20	3.60	4.37	0.55	4.94	10.13
BARIUM	mg/kg	6	167.00	142.00	155.67	8.89	164.91	253.82
BERYLLIUM	mg/kg	5	1.20	0.57	0.88	0.23	1.12	11.65
CADMIUM	mg/kg	1	1.30	1.30	1.30			2.55
CALCIUM	mg/kg	6	18,900.00	6,400.00	14,850.00	4,780.27	19,821.48	18,446.12
CESIUM	mg/kg	2	3.40	3.20	3.30	0.14	3.45	442.39
CHROMIUM	mg/kg	6	17.50	8.50	14.58	3.49	18.21	31.88
COBALT	mg/kg	6	12.80	6.40	8.48	2.24	10.82	16.43
COPPER	mg/kg	6	31.00	20.40	24.50	3.49	28.13	36.78
IRON	mg/kg	6	22,200.00	14,000.00	17,683.33	2,702.16	20,493.58	28,612.98
LEAD	mg/kg	6	39.80	27.60	34.90	4.35	39.42	138.09
LITHIUM	mg/kg	4	14.00	11.60	12.63	1.10	13.77	41.01
MAGNESIUM	mg/kg	6	3,870.00	2,810.00	3,538.33	391.17	3,945.15	5,358.56
MANGANESE	mg/kg	6	264.00	177.00	214.50	30.47	246.19	907.35
MOLYBDENUM	mg/kg	2	6.70	5.40	6.05	0.92	7.01	31.75
NICKEL	mg/kg	5	19.80	15.20	17.84	1.72	19.62	24.16
POTASSIUM	mg/kg	5	3,110.00	1,840.00	2,558.00	493.93	3,071.69	3,159.74
SELENIUM	mg/kg	4	0.64	0.33	0.52	0.14	0.66	2.18
SILICON	mg/kg	5	1,750.00	222.00	767.00	629.53	1,421.71	1,741.79
SILVER	mg/kg	1	1.70	1.70	1.70			3.11
SODIUM	mg/kg	6	299.00	142.00	212.50	68.35	283.58	593.09
STRONTIUM	mg/kg	6	74.50	52.60	65.00	7.83	73.15	291.42
TIN	mg/kg	3	18.80	10.40	14.50	4.20	18.87	40.57
VANADIUM	mg/kg	6	43.40	24.60	37.17	6.61	44.04	63.39
ZINC	mg/kg	6	120.00	87.50	98.98	12.36	111.83	139.04

CHEMICAL GROUP: ORGANICS								
2-BUTANONE	µg/kg	1	10.00	10.00	10.00			
4,4'-DDT	µg/kg	1	5.50	5.50	5.50			
4-METHYL-2-PENTANONE	µg/kg	1	3.00	3.00	3.00			
4-METHYLPHENOL	µg/kg	2	720.00	93.00	406.50	443.36	867.59	
ACETONE	µg/kg	2	66.00	23.00	44.50	30.41	76.12	
Aldol Condensation	µg/kg	2	20,000.00	5,800.00	12,900.00	10,040.92	23,342.55	
AROCLOR-1254	µg/kg	4	510.00	140.00	257.50	171.73	436.10	
BENZO(a)ANTHRACENE	µg/kg	1	64.00	64.00	64.00			
BENZO(a)PYRENE	µg/kg	1	110.00	110.00	110.00			
BENZO(b)FLUORANTHENE	µg/kg	1	120.00	120.00	120.00			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED029

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
BENZO(K)FLUORANTHENE	µg/kg	1	110.00	110.00	110.00			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	5	310.00	67.00	191.40	89.47	284.45	
Cholest-5-en-3-ol (3.beta.)-	µg/kg	1	3,300.00	3,300.00	3,300.00			
CHOLESTEROL	µg/kg	1	2,000.00	2,000.00	2,000.00			
CHRYSENE	µg/kg	1	87.00	87.00	87.00			
DI-n-BUTYL PHTHALATE	µg/kg	2	68.00	46.00	57.00	15.56	73.18	
ETHYLBENZENE	µg/kg	1	5.00	5.00	5.00			
FLUORANTHENE	µg/kg	1	120.00	120.00	120.00			
gamma-BHC (LINDANE)	µg/kg	1	4.40	4.40	4.40			
Hexadecanoic Acid	µg/kg	2	2,700.00	1,600.00	2,150.00	777.82	2,958.93	
HYDROCARBON C6H14	µg/kg	1	20.00	20.00	20.00			
METHYLENE CHLORIDE	µg/kg	1	16.00	16.00	16.00			
PHENANTHRENE	µg/kg	1	66.00	66.00	66.00			
PYRENE	µg/kg	2	140.00	73.00	106.50	47.38	155.77	
Stigmast-5-en-3-ol, (3.beta.)	µg/kg	2	2,900.00	2,100.00	2,500.00	565.69	3,088.31	
SUB.BENZENEDICARBOXYLIC A	µg/kg	1	400.00	400.00	400.00			
Sulfur, mol. (S8)	µg/kg	1	2,200.00	2,200.00	2,200.00			
TOLUENE	µg/kg	1	2.00	2.00	2.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	5	0.13	0.02	0.08	0.05	0.13	1.77
CESIUM-134	pCi/g	2	0.12	0.04	0.08	0.05	0.14	
CESIUM-137	pCi/g	6	0.20	0.11	0.15	0.04	0.19	1.54
GROSS ALPHA	pCi/g	6	21.60	10.02	16.76	4.71	21.65	87.54
GROSS BETA	pCi/g	6	29.35	8.94	22.48	7.95	30.75	66.83
PLUTONIUM-239/240	pCi/g	5	0.73	0.29	0.54	0.19	0.74	5.62
RADIUM-226	pCi/g	5	2.10	0.90	1.33	0.48	1.83	2.22
RADIUM-228	pCi/g	5	3.00	1.28	2.11	0.61	2.75	4.55
STRONTIUM-89,90	pCi/g	5	3.24	0.04	1.12	1.40	2.57	1.07
TRITIUM	pCi/L	5	651.00	0.00	182.61	268.63	461.98	1,030.59
URANIUM-233,-234	pCi/g	6	1.42	0.20	0.84	0.44	1.30	5.29
URANIUM-235	pCi/g	6	0.06	0.01	0.04	0.02	0.06	0.21
URANIUM-238	pCi/g	6	1.64	0.29	1.07	0.55	1.65	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	4	87.00	44.40	56.40	20.47	77.69	
ALKALINITY AS CaCO3	mg/kg	4	10,000.00	2,200.00	5,350.00	3,466.51	8,955.17	19,839.86
BICARBONATE AS CaCO3	mg/kg	2	2,650.00	1,720.00	2,185.00	657.61	2,868.91	18,993.76
CARBONATE AS CaCO3	mg/kg	1	30.60	30.60	30.60			
NITRATE/NITRITE	mg/kg	4	13.50	0.61	5.65	5.73	11.61	57.19
pH	pH	6	7.80	7.20	7.46	0.22	7.69	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED037

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	2	14,100.00	10,700.00	12,400.00	2,404.16	14,900.33	21,387.27
ARSENIC	mg/kg	2	5.90	4.80	5.35	0.78	6.16	10.13
BARIUM	mg/kg	2	240.00	167.00	203.50	51.62	257.18	253.82
BERYLLIUM	mg/kg	2	0.97	0.81	0.89	0.11	1.01	11.65
CADMIUM	mg/kg	1	0.79	0.79	0.79			2.55
CALCIUM	mg/kg	2	15,500.00	8,680.00	12,090.00	4,822.47	17,105.37	18,446.12
CESIUM	mg/kg	1	5.20	5.20	5.20			442.39
CHROMIUM	mg/kg	2	14.20	13.60	13.90	0.42	14.34	31.88
COBALT	mg/kg	2	13.10	10.10	11.60	2.12	13.81	16.43
COPPER	mg/kg	2	38.30	26.00	32.15	8.70	41.20	36.78
IRON	mg/kg	2	17,000.00	14,600.00	15,800.00	1,697.06	17,564.94	28,612.98
LEAD	mg/kg	2	32.20	27.50	29.85	3.32	33.31	138.09
LITHIUM	mg/kg	1	8.40	8.40	8.40			41.01
MAGNESIUM	mg/kg	2	3,480.00	3,370.00	3,425.00	77.78	3,505.89	5,358.56
MANGANESE	mg/kg	2	108.00	103.00	105.50	3.54	109.18	907.35
MOLYBDENUM	mg/kg	1	4.80	4.80	4.80			31.75
NICKEL	mg/kg	2	33.00	26.90	29.95	4.31	34.44	24.16
POTASSIUM	mg/kg	1	1,610.00	1,610.00	1,610.00			3,159.74
SILICON	mg/kg	2	1,160.00	254.00	707.00	640.64	1,373.26	1,741.79
SODIUM	mg/kg	2	399.00	130.00	264.50	190.21	462.32	593.09
STRONTIUM	mg/kg	2	81.10	73.30	77.20	5.52	82.94	291.42
TIN	mg/kg	1	10.20	10.20	10.20			40.57
VANADIUM	mg/kg	2	38.80	30.90	34.85	5.59	40.66	63.39
ZINC	mg/kg	2	291.00	126.00	208.50	116.67	329.84	139.04

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/kg	1	11.00	11.00	11.00			
4-METHYLPHENOL	µg/kg	1	510.00	510.00	510.00			
ACETONE	µg/kg	1	54.00	54.00	54.00			
Aldol Condensation	µg/kg	1	7,100.00	7,100.00	7,100.00			
AROCLOR-1254	µg/kg	2	86.00	51.00	68.50	24.75	94.24	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	2	440.00	260.00	350.00	127.28	482.37	
CHOLESTEROL	µg/kg	1	800.00	800.00	800.00			
FLUORANTHENE	µg/kg	1	120.00	120.00	120.00			
HEXADECANOIC ACID	µg/kg	2	7,700.00	900.00	4,300.00	4,808.33	9,300.66	
METHYLENE CHLORIDE	µg/kg	1	8.00	8.00	8.00			
Octadecanoic Acid	µg/kg	1	2,400.00	2,400.00	2,400.00			
PYRENE	µg/kg	1	100.00	100.00	100.00			
Stigmast-5-en-3-ol, (3.beta.	µg/kg	1	10,000.00	10,000.00	10,000.00			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED037

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
Tetradecanoic Acid	µg/kg	1	4,200.00	4,200.00	4,200.00			
TOLUENE	µg/kg	1	8.00	8.00	8.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	2	0.03	0.02	0.02	0.01	0.03	1.77
CESIUM-134	pCi/g	1	0.04	0.04	0.04			
CESIUM-137	pCi/g	2	0.15	0.07	0.11	0.06	0.17	1.54
GROSS ALPHA	pCi/g	2	15.51	15.30	15.41	0.15	15.56	87.54
GROSS BETA	pCi/g	2	27.52	21.20	24.36	4.47	29.01	66.83
PLUTONIUM-239/240	pCi/g	2	0.35	0.03	0.19	0.23	0.43	5.62
RADIUM-226	pCi/g	1	0.94	0.94	0.94			2.22
RADIUM-228	pCi/g	1	1.86	1.86	1.86			4.55
STRONTIUM-89,90	pCi/g	2	0.26	0.08	0.17	0.13	0.30	1.07
TRITIUM	pCi/L	2	133.10	79.49	106.30	37.91	145.72	1,030.59
URANIUM-233,-234	pCi/g	2	1.09	0.32	0.70	0.54	1.27	5.29
URANIUM-235	pCi/g	2	0.06	0.02	0.04	0.03	0.06	0.21
URANIUM-238	pCi/g	2	1.20	0.31	0.76	0.63	1.41	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	1	67.00	67.00	67.00			
ALKALINITY AS CaCO3	mg/kg	1	1,400.00	1,400.00	1,400.00			19,839.86
BICARBONATE AS CaCO3	mg/kg	1	1,720.00	1,720.00	1,720.00			18,993.76
NITRATE/NITRITE	mg/kg	1	1.14	1.14	1.14			57.19
pH	pH	2	7.40	7.06	7.23	0.24	7.48	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED038

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	1	16,600.00	16,600.00	16,600.00			21,387.27
ARSENIC	mg/kg	1	4.40	4.40	4.40			10.13
BARIUM	mg/kg	1	143.00	143.00	143.00			253.82
BERYLLIUM	mg/kg	1	0.86	0.86	0.86			11.65
CALCIUM	mg/kg	1	11,000.00	11,000.00	11,000.00			18,446.12
CHROMIUM	mg/kg	1	15.50	15.50	15.50			31.88
COBALT	mg/kg	1	10.10	10.10	10.10			16.43
COPPER	mg/kg	1	16.90	16.90	16.90			36.78
IRON	mg/kg	1	20,400.00	20,400.00	20,400.00			28,612.98
LEAD	mg/kg	1	21.40	21.40	21.40			138.09
LITHIUM	mg/kg	1	13.80	13.80	13.80			41.01
MAGNESIUM	mg/kg	1	4,520.00	4,520.00	4,520.00			5,358.56
MANGANESE	mg/kg	1	285.00	285.00	285.00			907.35
MOLYBDENUM	mg/kg	1	5.20	5.20	5.20			31.75
NICKEL	mg/kg	1	17.60	17.60	17.60			24.16
POTASSIUM	mg/kg	1	2,330.00	2,330.00	2,330.00			3,159.74
SELENIUM	mg/kg	1	0.41	0.41	0.41			2.18
SILICON	mg/kg	1	242.00	242.00	242.00			1,741.79
SODIUM	mg/kg	1	128.00	128.00	128.00			593.09
STRONTIUM	mg/kg	1	52.50	52.50	52.50			291.42
TIN	mg/kg	1	13.10	13.10	13.10			40.57
VANADIUM	mg/kg	1	38.90	38.90	38.90			63.39
ZINC	mg/kg	1	77.10	77.10	77.10			139.04

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/kg	1	19.00	19.00	19.00			
ACETONE	µg/kg	1	71.00	71.00	71.00			
AROCLOR-1254	µg/kg	2	84.00	70.00	77.00	9.90	87.30	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	1	1,400.00	1,400.00	1,400.00			
DI-n-BUTYL PHTHALATE	µg/kg	1	65.00	65.00	65.00			
DI-n-OCTYL PHTHALATE	µg/kg	1	210.00	210.00	210.00			
FLUORANTHENE	µg/kg	1	70.00	70.00	70.00			
METHYLENE CHLORIDE	µg/kg	1	14.00	14.00	14.00			
PYRENE	µg/kg	1	87.00	87.00	87.00			
SUB.BENZENEDICARBOXYLIC A	µg/kg	1	300.00	300.00	300.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	1	0.02	0.02	0.02			1.77
CESIUM-134	pCi/g	1	0.11	0.11	0.11			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED038

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CESIUM-137	pCi/g	1	0.08	0.08	0.08			1.54
GROSS ALPHA	pCi/g	1	37.40	37.40	37.40			87.54
GROSS BETA	pCi/g	1	33.80	33.80	33.80			66.83
PLUTONIUM-239/240	pCi/g	1	0.03	0.03	0.03			5.62
STRONTIUM-89,90	pCi/g	1	0.20	0.20	0.20			1.07
TRITIUM	pCi/L	1	140.38	140.38	140.38			1,030.59
URANIUM-233,-234	pCi/g	1	0.31	0.31	0.31			5.29
URANIUM-235	pCi/g	1	0.00	0.00	0.00			0.21
URANIUM-238	pCi/g	1	0.38	0.38	0.38			4.82

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

% SOLIDS	%	1	61.70	61.70	61.70			
ALKALINITY AS CaCO3	mg/kg	1	4,900.00	4,900.00	4,900.00			19,839.86
NITRATE/NITRITE	mg/kg	1	1.80	1.80	1.80			57.19
pH	pH	1	8.00	8.00	8.00			9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED039

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	3	16,100.00	8,760.00	12,420.00	3,670.04	16,236.84	21,387.27
ARSENIC	mg/kg	3	6.50	1.73	4.28	2.40	6.77	10.13
BARIUM	mg/kg	3	189.00	100.00	141.33	44.84	187.96	253.82
BERYLLIUM	mg/kg	1	0.87	0.87	0.87			11.65
CALCIUM	mg/kg	3	36,600.00	9,110.00	19,303.33	15,058.82	34,964.51	18,446.12
CESIUM	mg/kg	3	3.90	2.23	2.94	0.86	3.84	442.39
CHROMIUM	mg/kg	3	23.90	10.70	18.83	7.11	26.23	31.88
COBALT	mg/kg	3	11.60	6.40	8.53	2.72	11.36	16.43
COPPER	mg/kg	3	39.00	16.40	26.20	11.59	38.26	36.78
IRON	mg/kg	3	19,800.00	13,700.00	15,900.00	3,386.74	19,422.21	28,612.98
LEAD	mg/kg	3	31.30	18.60	24.08	6.53	30.87	138.09
LITHIUM	mg/kg	1	10.00	10.00	10.00			41.01
MAGNESIUM	mg/kg	3	6,050.00	3,170.00	4,166.67	1,631.94	5,863.89	5,358.56
MANGANESE	mg/kg	3	338.00	192.00	260.33	73.45	336.72	907.35
NICKEL	mg/kg	1	11.80	11.80	11.80			24.16
POTASSIUM	mg/kg	2	2,930.00	2,450.00	2,690.00	339.41	3,042.99	3,159.74
SILICON	mg/kg	2	861.00	83.80	472.40	549.56	1,043.95	1,741.79
SODIUM	mg/kg	2	696.00	372.00	534.00	229.10	772.27	593.09
STRONTIUM	mg/kg	3	135.00	44.60	78.20	49.46	129.64	291.42
VANADIUM	mg/kg	3	46.70	23.70	34.83	11.52	46.81	63.39
ZINC	mg/kg	3	199.00	46.90	119.30	76.31	198.66	139.04

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/kg	1	11.00	11.00	11.00			
9-Hexadecenoic Acid	µg/kg	1	16,000.00	16,000.00	16,000.00			
ACETONE	µg/kg	2	350.00	36.00	193.00	222.03	423.91	
Aldol Condensation	µg/kg	2	23,000.00	9,800.00	16,400.00	9,333.81	26,107.16	
BENZO(b)FLUORANTHENE	µg/kg	1	190.00	190.00	190.00			
BENZO(k)FLUORANTHENE	µg/kg	1	110.00	110.00	110.00			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	3	280.00	120.00	213.33	83.27	299.93	
Cholest-5-en-3-ol (3.beta.)-	µg/kg	1	11,000.00	11,000.00	11,000.00			
CHRYSENE	µg/kg	2	190.00	63.00	126.50	89.80	219.89	
Ergost-5-en-3-ol, (3.beta.)-	µg/kg	1	4,300.00	4,300.00	4,300.00			
FLUORANTHENE	µg/kg	2	380.00	130.00	255.00	176.78	438.85	
Hexadecanoic Acid	µg/kg	1	8,600.00	8,600.00	8,600.00			
METHYLENE CHLORIDE	µg/kg	1	5.00	5.00	5.00			
PHENANTHRENE	µg/kg	1	190.00	190.00	190.00			
PYRENE	µg/kg	1	310.00	310.00	310.00			
Stigmast-5-en-3-ol, (3.beta.)	µg/kg	1	8,200.00	8,200.00	8,200.00			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED039

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
Tetradecanoic Acid	µg/kg	1	2,900.00	2,900.00	2,900.00			
TOLUENE	µg/kg	1	5.00	5.00	5.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	3	0.40	0.02	0.15	0.21	0.38	1.77
CESIUM-134	pCi/g	1	0.13	0.13	0.13			
CESIUM-137	pCi/g	3	0.25	0.07	0.17	0.09	0.27	1.54
GROSS ALPHA	pCi/g	3	320.00	17.07	119.18	173.93	300.06	87.54
GROSS BETA	pCi/g	3	38.10	26.57	31.75	5.85	37.84	66.83
PLUTONIUM-239/240	pCi/g	3	17.06	0.08	5.76	9.79	15.94	5.62
RADIUM-226	pCi/g	2	1.02	0.93	0.97	0.06	1.04	2.22
RADIUM-228	pCi/g	2	2.01	1.90	1.95	0.08	2.04	4.55
STRONTIUM-89,90	pCi/g	3	1.54	0.04	0.55	0.86	1.44	1.07
TRITIUM	pCi/L	3	98.47	0.00	49.49	49.24	100.70	1,030.59
URANIUM-233,-234	pCi/g	3	1.53	0.23	0.92	0.66	1.61	5.29
URANIUM-235	pCi/g	3	0.06	0.00	0.03	0.03	0.06	0.21
URANIUM-238	pCi/g	3	1.72	0.31	1.22	0.79	2.04	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/kg	2	5,340.00	2,330.00	3,835.00	2,128.39	6,048.53	18,993.76
CARBONATE AS CaCO3	mg/kg	1	0.00	0.00	0.00			
NITRATE/NITRITE	mg/kg	2	7.96	1.01	4.49	4.91	9.60	57.19
pH	pH	3	8.03	7.36	7.60	0.37	7.99	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED117

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CHEMICAL GROUP: METALS								
ALUMINUM	mg/kg	5	23,700.00	11,000.00	14,240.00	5,344.90	19,798.70	21,387.27
ANTIMONY	mg/kg	1	5.60	5.60	5.60			17.68
ARSENIC	mg/kg	5	7.20	5.30	6.26	0.78	7.07	10.13
BARIUM	mg/kg	5	145.00	117.00	127.40	11.15	138.99	253.82
BERYLLIUM	mg/kg	5	1.00	0.52	0.81	0.20	1.02	11.65
CALCIUM	mg/kg	5	7,190.00	5,160.00	6,104.00	828.99	6,966.15	18,446.12
CHROMIUM	mg/kg	4	11.30	9.40	10.03	0.87	10.93	31.88
COBALT	mg/kg	5	9.60	5.00	7.24	1.73	9.04	16.43
COPPER	mg/kg	5	18.60	12.60	15.46	2.46	18.02	36.78
IRON	mg/kg	5	26,000.00	18,200.00	21,280.00	3,174.43	24,581.41	28,612.98
LEAD	mg/kg	5	22.10	15.60	17.54	2.61	20.26	138.09
LITHIUM	mg/kg	5	13.20	6.90	9.04	2.44	11.57	41.01
MAGNESIUM	mg/kg	5	4,500.00	2,980.00	3,468.00	614.06	4,106.62	5,358.56
MANGANESE	mg/kg	5	634.00	323.00	412.40	128.38	545.91	907.35
MOLYBDENUM	mg/kg	2	9.80	6.80	8.30	2.12	10.51	31.75
NICKEL	mg/kg	5	18.90	12.60	14.96	2.51	17.57	24.16
POTASSIUM	mg/kg	5	2,240.00	1,550.00	1,780.00	284.17	2,075.53	3,159.74
SILICON	mg/kg	5	1,220.00	207.00	630.80	477.44	1,127.34	1,741.79
SILVER	mg/kg	2	2.10	0.95	1.53	0.81	2.37	3.11
SODIUM	mg/kg	5	369.00	167.00	268.80	76.89	348.76	593.09
STRONTIUM	mg/kg	5	46.70	35.90	41.56	5.22	46.99	291.42
TIN	mg/kg	2	13.40	12.90	13.15	0.35	13.52	40.57
VANADIUM	mg/kg	5	41.40	24.60	30.06	6.64	36.96	63.39
ZINC	mg/kg	5	182.00	69.30	109.26	46.10	157.20	139.04

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/kg	2	29.00	19.00	24.00	7.07	31.35	
2-METHYLNAPHTHALENE	µg/kg	2	120.00	63.00	91.50	40.31	133.42	
4,4'-DDT	µg/kg	1	4.10	4.10	4.10			
ACENAPHTHENE	µg/kg	5	620.00	110.00	294.00	211.02	513.46	
ACETONE	µg/kg	3	180.00	30.00	110.00	75.50	188.52	
ANTHRACENE	µg/kg	5	970.00	140.00	390.00	336.82	740.30	
BENZO(a)ANTHRACENE	µg/kg	5	1,400.00	380.00	746.00	414.89	1,177.48	
BENZO(a)PYRENE	µg/kg	5	1,300.00	270.00	600.00	408.47	1,024.81	
BENZO(b)FLUORANTHENE	µg/kg	5	1,500.00	350.00	692.00	480.44	1,191.65	
BENZO(ghi)PERYLENE	µg/kg	4	560.00	180.00	357.50	190.85	555.99	
BENZO(k)FLUORANTHENE	µg/kg	5	1,100.00	210.00	560.00	345.47	919.29	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	3	1,500.00	86.00	560.33	813.79	1,406.67	
CHRYSENE	µg/kg	5	1,500.00	400.00	746.00	452.31	1,216.40	

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED117

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
DIBENZOFURAN	µg/kg	3	300.00	100.00	190.00	101.49	295.55	
ENDOSULFAN I	µg/kg	1	20.00	20.00	20.00			
FLUORANTHENE	µg/kg	5	3,100.00	770.00	1,610.00	936.32	2,583.78	
FLUORENE	µg/kg	5	650.00	94.00	274.80	228.18	512.11	
HEXADECANOIC ACID	µg/kg	1	400.00	400.00	400.00			
INDENO(1,2,3-cd)PYRENE	µg/kg	4	560.00	170.00	362.50	191.38	561.53	
METHYLENE CHLORIDE	µg/kg	1	41.00	41.00	41.00			
NAPHTHALENE	µg/kg	3	290.00	110.00	210.00	91.65	305.32	
PHENANTHRENE	µg/kg	5	3,300.00	680.00	1,622.00	1,098.96	2,764.92	
PYRENE	µg/kg	5	3,900.00	900.00	1,912.00	1,220.95	3,181.79	
SUB.BENZENEDICARBOXYLIC A	µg/kg	1	400.00	400.00	400.00			

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	3	0.02	0.00	0.01	0.01	0.02	1.77
CESIUM-134	pCi/g	1	0.10	0.10	0.10			
CESIUM-137	pCi/g	5	0.13	0.09	0.11	0.02	0.13	1.54
GROSS ALPHA	pCi/g	5	33.00	4.50	13.35	11.38	25.19	87.54
GROSS BETA	pCi/g	5	36.00	5.42	21.18	13.42	35.14	66.83
PLUTONIUM-239/240	pCi/g	3	0.03	0.02	0.03	0.01	0.03	5.62
RADIUM-226	pCi/g	5	1.40	0.93	1.11	0.20	1.32	2.22
RADIUM-228	pCi/g	5	2.14	1.21	1.66	0.34	2.02	4.55
STRONTIUM-89,90	pCi/g	3	0.16	0.08	0.13	0.04	0.17	1.07
TRITIUM	pCi/L	4	158.96	-77.60	12.47	102.73	119.30	1,030.59
URANIUM-233,-234	pCi/g	5	1.06	0.31	0.83	0.31	1.15	5.29
URANIUM-235	pCi/g	5	0.14	0.00	0.04	0.06	0.10	0.21
URANIUM-238	pCi/g	5	1.40	0.15	0.80	0.48	1.30	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	5	67.00	61.90	65.30	2.01	67.39	
ALKALINITY AS CaCO3	mg/kg	3	4,500.00	1,800.00	3,400.00	1,417.74	4,874.45	19,839.86
NITRATE/NITRITE	mg/kg	2	2.10	1.40	1.75	0.49	2.26	57.19
pH	pH	5	8.00	7.00	7.28	0.41	7.71	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED118

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CHEMICAL GROUP: METALS								
ALUMINUM	mg/kg	5	17,900.00	7,710.00	10,478.00	4,202.43	14,848.53	21,387.27
ARSENIC	mg/kg	5	7.30	4.60	5.92	1.10	7.07	10.13
BARIUM	mg/kg	5	138.00	83.40	104.58	21.31	126.75	253.82
BERYLLIUM	mg/kg	5	0.82	0.64	0.70	0.07	0.78	11.65
CADMIUM	mg/kg	1	1.40	1.40	1.40			2.55
CALCIUM	mg/kg	5	9,560.00	6,730.00	8,214.00	1,343.46	9,611.20	18,446.12
CHROMIUM	mg/kg	5	15.60	5.80	8.96	3.95	13.06	31.88
COBALT	mg/kg	5	8.00	4.70	6.22	1.32	7.59	16.43
COPPER	mg/kg	5	17.60	11.10	13.86	2.43	16.38	36.78
IRON	mg/kg	5	18,600.00	11,700.00	14,060.00	2,780.83	16,952.06	28,612.98
LEAD	mg/kg	5	21.40	13.60	16.40	3.02	19.54	138.09
LITHIUM	mg/kg	6	11.50	6.00	7.53	2.00	9.61	41.01
MAGNESIUM	mg/kg	5	3,770.00	2,180.00	2,642.00	657.85	3,326.17	5,358.56
MANGANESE	mg/kg	5	375.00	189.00	263.20	91.00	357.84	907.35
MOLYBDENUM	mg/kg	1	6.20	6.20	6.20			31.75
NICKEL	mg/kg	5	16.70	10.80	12.42	2.49	15.00	24.16
POTASSIUM	mg/kg	5	1,990.00	1,000.00	1,340.00	380.99	1,736.22	3,159.74
SILICON	mg/kg	5	1,320.00	214.00	665.60	505.11	1,190.91	1,741.79
SILVER	mg/kg	2	1.80	0.99	1.40	0.57	1.99	3.11
SODIUM	mg/kg	5	260.00	112.00	168.60	58.20	229.12	593.09
STRONTIUM	mg/kg	6	57.40	38.10	43.25	7.04	50.57	291.42
THALLIUM	mg/kg	1	0.45	0.45	0.45			1.10
TIN	mg/kg	2	11.90	9.20	10.55	1.91	12.54	40.57
VANADIUM	mg/kg	5	33.80	17.50	24.12	6.09	30.45	63.39
ZINC	mg/kg	5	99.60	49.60	64.08	20.45	85.35	139.04

CHEMICAL GROUP: ORGANICS

4,4'-DDT	µg/kg	2	4.80	2.90	3.85	1.34	5.25	
BENZO(a)ANTHRACENE	µg/kg	3	78.00	49.00	59.33	16.20	76.18	
BENZO(a)PYRENE	µg/kg	1	76.00	76.00	76.00			
BENZO(b)FLUORANTHENE	µg/kg	3	82.00	61.00	68.33	11.85	80.65	
BENZO(k)FLUORANTHENE	µg/kg	1	96.00	96.00	96.00			
BENZOIC ACID	µg/kg	1	197.00	197.00	197.00			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	1	110.00	110.00	110.00			
CHRYSENE	µg/kg	3	88.00	51.00	64.00	20.81	85.64	
DI-n-BUTYL PHTHALATE	µg/kg	1	54.00	54.00	54.00			
FLUORANTHENE	µg/kg	5	170.00	68.00	103.40	41.43	146.49	
HEXADECANOIC ACID	µg/kg	1	1,000.00	1,000.00	1,000.00			
METHYLENE CHLORIDE	µg/kg	1	110.00	110.00	110.00			

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED118

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
PHENANTHRENE	µg/kg	3	120.00	71.00	95.33	24.50	120.82	
PYRENE	µg/kg	5	190.00	68.00	111.20	47.85	160.96	
SUB.BENZENEDICARBOXYLIC A	µg/kg	2	700.00	400.00	550.00	212.13	770.62	

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	4	0.03	0.01	0.01	0.01	0.02	1.77
CESIUM-134	pCi/g	1	0.03	0.03	0.03			
CESIUM-137	pCi/g	5	0.12	0.04	0.08	0.03	0.11	1.54
GROSS ALPHA	pCi/g	5	28.00	5.07	14.72	11.13	26.30	87.54
GROSS BETA	pCi/g	5	37.00	3.28	18.75	13.53	32.83	66.83
PLUTONIUM-239/240	pCi/g	4	0.04	0.02	0.03	0.01	0.03	5.62
RADIUM-226	pCi/g	5	1.20	0.74	0.97	0.18	1.15	2.22
RADIUM-228	pCi/g	5	2.05	1.20	1.51	0.34	1.87	4.55
STRONTIUM-89,90	pCi/g	4	0.36	0.02	0.16	0.14	0.31	1.07
TRITIUM	pCi/L	4	316.70	0.00	115.48	138.46	259.47	1,030.59
URANIUM-233,-234	pCi/g	5	1.32	0.15	0.81	0.46	1.29	5.29
URANIUM-235	pCi/g	5	0.06	0.01	0.04	0.03	0.06	0.21
URANIUM-238	pCi/g	5	1.30	0.13	0.81	0.48	1.31	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	5	.69.20	50.80	62.88	7.24	70.41	
ALKALINITY AS CaCO3	mg/kg	5	4,400.00	1,100.00	2,680.00	1,269.65	4,000.43	19,839.86
NITRATE/NITRITE	mg/kg	3	6.30	3.10	4.53	1.63	6.22	57.19
pH	pH	5	8.30	7.20	7.78	0.43	8.23	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED120

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	4	12,400.00	6,970.00	9,182.50	2,363.66	11,640.71	21,387.27
ARSENIC	mg/kg	4	5.10	4.00	4.45	0.51	4.98	10.13
BARIUM	mg/kg	4	184.00	85.10	117.75	44.92	164.46	253.82
BERYLLIUM	mg/kg	4	0.80	0.63	0.68	0.08	0.76	11.65
CALCIUM	mg/kg	4	26,300.00	9,030.00	20,482.50	8,142.07	28,950.25	18,446.12
CHROMIUM	mg/kg	4	12.30	5.50	8.05	3.02	11.19	31.88
COBALT	mg/kg	4	5.60	4.60	5.25	0.45	5.72	16.43
COPPER	mg/kg	4	13.50	11.40	12.58	1.04	13.66	36.78
IRON	mg/kg	4	18,300.00	11,500.00	14,575.00	2,886.03	17,576.47	28,612.98
LEAD	mg/kg	4	21.80	13.60	17.88	4.49	22.54	138.09
LITHIUM	mg/kg	4	10.20	7.00	8.05	1.46	9.57	41.01
MAGNESIUM	mg/kg	4	2,820.00	2,030.00	2,447.50	345.96	2,807.30	5,358.56
MANGANESE	mg/kg	4	267.00	160.00	207.25	46.65	255.77	907.35
NICKEL	mg/kg	4	13.80	9.10	11.65	2.05	13.79	24.16
POTASSIUM	mg/kg	4	1,730.00	1,120.00	1,422.50	316.90	1,752.07	3,159.74
SELENIUM	mg/kg	2	0.28	0.26	0.27	0.01	0.28	2.18
SILICON	mg/kg	4	1,190.00	168.00	537.50	452.25	1,007.84	1,741.79
SODIUM	mg/kg	4	742.00	93.40	417.35	337.86	768.72	593.09
STRONTIUM	mg/kg	4	64.80	42.90	54.10	10.68	65.21	291.42
THALLIUM	mg/kg	1	0.54	0.54	0.54			1.10
TIN	mg/kg	3	14.80	9.00	11.53	2.97	14.62	40.57
VANADIUM	mg/kg	4	37.90	22.00	30.70	7.57	38.57	63.39
ZINC	mg/kg	4	95.00	41.60	73.68	22.87	97.46	139.04

CHEMICAL GROUP: ORGANICS

ACENAPHTHENE	µg/kg	1	56.00	56.00	56.00			
ANTHRACENE	µg/kg	1	68.00	68.00	68.00			
AROCLOR-1254	µg/kg	1	50.00	50.00	50.00			
BENZO(a)ANTHRACENE	µg/kg	3	190.00	64.00	110.33	69.30	182.40	
BENZO(a)PYRENE	µg/kg	2	210.00	120.00	165.00	63.64	231.19	
BENZO(b)FLUORANTHENE	µg/kg	3	230.00	55.00	135.00	88.46	227.00	
BENZO(ghi)PERYLENE	µg/kg	1	64.00	64.00	64.00			
BENZO(k)FLUORANTHENE	µg/kg	3	250.00	37.00	127.67	109.97	242.04	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	3	280.00	110.00	170.00	95.39	269.21	
CHRYSENE	µg/kg	3	210.00	64.00	124.67	76.06	203.77	
DI-n-BUTYL PHTHALATE	µg/kg	2	130.00	39.00	84.50	64.35	151.42	
FLUORANTHENE	µg/kg	3	440.00	120.00	240.00	174.36	421.33	
INDENO(1,2,3-cd)PYRENE	µg/kg	1	60.00	60.00	60.00			
PHENANTHRENE	µg/kg	3	360.00	84.00	184.67	152.40	343.16	

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED120

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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PYRENE	µg/kg	3	510.00	110.00	256.67	220.30	485.78	
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CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	3	0.26	0.03	0.11	0.13	0.24	1.77
CESIUM-134	pCi/g	2	0.16	0.11	0.14	0.04	0.17	
CESIUM-137	pCi/g	4	0.49	0.06	0.19	0.20	0.40	1.54
GROSS ALPHA	pCi/g	4	49.80	5.80	18.26	21.14	40.25	87.54
GROSS BETA	pCi/g	4	240.40	4.82	70.56	113.73	188.84	66.83
PLUTONIUM-239/240	pCi/g	3	1.01	0.10	0.61	0.47	1.10	5.62
RADIUM-226	pCi/g	4	2.19	0.60	1.10	0.74	1.87	2.22
RADIUM-228	pCi/g	4	2.59	1.10	1.63	0.66	2.32	4.55
STRONTIUM-89,90	pCi/g	3	1.46	0.09	0.58	0.77	1.37	1.07
TRITIUM	pCi/L	3	258.44	0.00	163.95	142.53	312.18	1,030.59
URANIUM-233,-234	pCi/g	4	1.44	0.44	0.78	0.46	1.26	5.29
URANIUM-235	pCi/g	4	0.05	0.01	0.02	0.02	0.04	0.21
URANIUM-238	pCi/g	4	1.73	0.28	0.71	0.69	1.42	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	4	94.40	63.40	85.07	14.57	100.23	
ALKALINITY AS CaCO3	mg/kg	3	11,000.00	1,300.00	4,533.33	5,600.30	10,357.64	19,839.86
NITRATE/NITRITE	mg/kg	4	163.00	3.40	58.83	74.94	136.76	57.19
pH	pH	4	8.90	7.60	8.40	0.57	8.99	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED124

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	4	11,200.00	6,860.00	9,142.50	2,088.58	11,314.62	21,387.27
ARSENIC	mg/kg	4	5.10	3.00	4.25	0.99	5.28	10.13
BARIUM	mg/kg	4	142.00	94.80	119.70	20.16	140.66	253.82
BERYLLIUM	mg/kg	4	0.86	0.46	0.70	0.18	0.88	11.65
CADMIUM	mg/kg	2	3.20	1.90	2.55	0.92	3.51	2.55
CALCIUM	mg/kg	4	19,200.00	7,520.00	12,505.00	5,506.97	18,232.25	18,446.12
CHROMIUM	mg/kg	4	70.10	9.80	30.00	28.05	59.17	31.88
COBALT	mg/kg	4	7.60	6.30	6.80	0.56	7.38	16.43
COPPER	mg/kg	4	46.70	12.80	25.15	15.26	41.02	36.78
IRON	mg/kg	4	18,500.00	11,300.00	14,000.00	3,203.12	17,331.25	28,612.98
LEAD	mg/kg	4	56.20	18.20	33.93	16.51	51.10	138.09
LITHIUM	mg/kg	4	8.70	6.50	7.43	0.93	8.39	41.01
MAGNESIUM	mg/kg	4	3,110.00	2,040.00	2,432.50	478.70	2,930.35	5,358.56
MANGANESE	mg/kg	4	299.00	167.00	231.50	67.63	301.83	907.35
MERCURY	mg/kg	1	0.21	0.21	0.21			0.46
NICKEL	mg/kg	4	49.00	13.70	24.15	16.78	41.60	24.16
POTASSIUM	mg/kg	4	1,780.00	1,110.00	1,405.00	290.34	1,706.96	3,159.74
SELENIUM	mg/kg	3	0.94	0.63	0.76	0.16	0.93	2.18
SILICON	mg/kg	4	1,710.00	172.00	883.50	776.70	1,691.27	1,741.79
SODIUM	mg/kg	4	198.00	111.00	151.75	43.26	196.74	593.09
STRONTIUM	mg/kg	4	53.00	31.90	43.43	8.78	52.56	291.42
THALLIUM	mg/kg	2	0.72	0.57	0.65	0.11	0.76	1.10
TIN	mg/kg	4	17.80	9.80	12.40	3.65	16.19	40.57
VANADIUM	mg/kg	4	28.40	17.80	23.23	4.37	27.77	63.39
ZINC	mg/kg	4	1,150.00	64.70	566.18	462.36	1,047.03	139.04

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/kg	1	27.00	27.00	27.00			
2-METHYLNAPHTHALENE	µg/kg	2	1,700.00	490.00	1,095.00	855.60	1,984.82	
4-METHYLPHENOL	µg/kg	1	990.00	990.00	990.00			
4-NITROANILINE	µg/kg	1	5,300.00	5,300.00	5,300.00			
ACENAPHTHENE	µg/kg	3	9,200.00	1,900.00	4,500.00	4,077.99	8,741.11	
ACENAPHTHYLENE	µg/kg	2	440.00	50.00	245.00	275.77	531.80	
ANTHRACENE	µg/kg	3	15,000.00	1,800.00	6,566.67	7,324.16	14,183.79	
AROCOR-1254	µg/kg	3	67,000.00	19,000.00	48,666.67	25,929.39	75,633.23	
BENZO(a)ANTHRACENE	µg/kg	3	21,000.00	3,300.00	10,466.67	9,317.90	20,157.29	
BENZO(a)PYRENE	µg/kg	3	24,000.00	3,100.00	11,133.33	11,257.15	22,840.77	
BENZO(b)FLUORANTHENE	µg/kg	3	27,000.00	3,200.00	12,433.33	12,764.93	25,708.86	
BENZO(ghi)PERYLENE	µg/kg	3	26,000.00	1,500.00	11,066.67	13,102.04	24,692.78	

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED124

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
BENZO(k)FLUORANTHENE	µg/kg	3	17,000.00	2,000.00	8,433.33	7,724.20	16,466.51	
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	3	24,000.00	420.00	8,940.00	13,079.86	22,543.06	
BUTYL BENZYL PHTHALATE	µg/kg	1	2,300.00	2,300.00	2,300.00			
CHRYSENE	µg/kg	3	25,000.00	3,300.00	12,166.67	11,380.83	24,002.73	
DIBENZO(a,h)ANTHRACENE	µg/kg	1	9,100.00	9,100.00	9,100.00			
DIBENZOFURAN	µg/kg	3	4,100.00	1,000.00	2,033.33	1,789.79	3,894.71	
FLUORANTHENE	µg/kg	3	50,000.00	6,700.00	24,233.33	22,793.93	47,939.02	
FLUORENE	µg/kg	3	8,900.00	1,600.00	4,166.67	4,104.06	8,434.89	
INDENO(1,2,3-cd)PYRENE	µg/kg	3	22,000.00	1,300.00	9,433.33	11,039.17	20,914.07	
NAPHTHALENE	µg/kg	3	4,400.00	1,000.00	2,166.67	1,934.77	4,178.83	
PHENANTHRENE	µg/kg	3	41,000.00	7,800.00	21,600.00	17,293.93	39,585.69	
PYRENE	µg/kg	3	42,000.00	8,400.00	23,133.33	17,177.12	40,997.53	

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	3	0.86	0.03	0.32	0.47	0.81	1.77
CESIUM-134	pCi/g	2	0.12	0.11	0.11	0.01	0.12	
CESIUM-137	pCi/g	4	0.80	0.13	0.34	0.31	0.67	1.54
GROSS ALPHA	pCi/g	4	32.56	3.94	18.73	12.36	31.58	87.54
GROSS BETA	pCi/g	4	32.94	3.78	14.07	12.92	27.50	66.83
PLUTONIUM-239/240	pCi/g	3	1.13	0.33	0.70	0.40	1.12	5.62
RADIUM-226	pCi/g	4	2.50	0.94	1.65	0.81	2.50	2.22
RADIUM-228	pCi/g	4	2.20	1.29	1.72	0.41	2.15	4.55
STRONTIUM-89,90	pCi/g	3	0.14	0.10	0.12	0.02	0.14	1.07
TRITIUM	pCi/L	4	1,000.00	213.36	684.70	334.56	1,032.65	1,030.59
URANIUM-233,-234	pCi/g	4	1.95	0.24	0.96	0.72	1.70	5.29
URANIUM-235	pCi/g	4	0.10	0.01	0.04	0.04	0.08	0.21
URANIUM-238	pCi/g	4	1.23	0.24	0.93	0.47	1.42	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	4	77.80	41.40	61.10	15.28	76.99	
ALKALINITY AS CaCO3	mg/kg	3	11,000.00	1,000.00	4,533.33	5,608.33	10,365.99	19,839.86
NITRATE/NITRITE	mg/kg	4	33.20	1.60	11.18	14.81	26.58	57.19
pH	pH	4	8.20	7.40	7.90	0.36	8.27	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED125

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
CHEMICAL GROUP: METALS								
ALUMINUM	mg/kg	3	11,100.00	5,650.00	8,916.67	2,881.98	11,913.93	21,387.27
ARSENIC	mg/kg	3	4.70	3.30	3.93	0.71	4.67	10.13
BARIUM	mg/kg	3	225.00	95.70	170.23	66.88	239.79	253.82
BERYLLIUM	mg/kg	3	0.83	0.62	0.71	0.11	0.82	11.65
CADMIUM	mg/kg	1	0.71	0.71	0.71			2.55
CALCIUM	mg/kg	3	13,500.00	11,100.00	12,200.00	1,212.44	13,460.93	18,446.12
CHROMIUM	mg/kg	3	22.10	9.10	15.73	6.50	22.50	31.88
COBALT	mg/kg	3	10.00	6.30	7.80	1.95	9.82	16.43
COPPER	mg/kg	3	21.20	10.20	16.80	5.82	22.85	36.78
IRON	mg/kg	3	12,600.00	8,150.00	10,583.33	2,254.07	12,927.57	28,612.98
LEAD	mg/kg	3	32.00	21.00	27.97	6.06	34.27	138.09
LITHIUM	mg/kg	4	7.60	3.80	6.60	1.87	8.54	41.01
MAGNESIUM	mg/kg	3	2,470.00	1,600.00	2,156.67	483.36	2,659.36	5,358.56
MANGANESE	mg/kg	3	686.00	170.00	348.67	292.31	652.67	907.35
NICKEL	mg/kg	3	18.60	6.60	11.20	6.47	17.93	24.16
POTASSIUM	mg/kg	3	1,680.00	814.00	1,298.00	441.92	1,757.60	3,159.74
SILICON	mg/kg	3	530.00	181.00	305.33	194.94	508.07	1,741.79
SODIUM	mg/kg	3	170.00	75.90	117.63	47.94	167.49	593.09
STRONTIUM	mg/kg	4	54.00	31.90	47.70	10.63	58.76	291.42
VANADIUM	mg/kg	3	32.90	15.40	24.77	8.81	33.93	63.39
ZINC	mg/kg	3	190.00	123.00	146.67	37.58	185.75	139.04

CHEMICAL GROUP: ORGANICS

2-METHYLNAPHTHALENE	µg/kg	4	350.00	110.00	212.50	121.76	339.13	
4,4'-DDT	µg/kg	2	73.00	18.00	45.50	38.89	85.95	
ACENAPHTHENE	µg/kg	3	1,800.00	510.00	1,270.00	675.06	1,972.06	
ACENAPHTHYLENE	µg/kg	2	64.00	52.00	58.00	8.49	66.82	
ACETONE	µg/kg	1	14.00	14.00	14.00			
ANTHRACENE	µg/kg	3	1,900.00	470.00	1,290.00	737.77	2,057.28	
AROCLOR-1254	µg/kg	1	530.00	530.00	530.00			
BENZO(a)ANTHRACENE	µg/kg	3	4,500.00	1,200.00	3,033.33	1,680.28	4,780.82	
BENZO(a)PYRENE	µg/kg	3	3,900.00	970.00	2,723.33	1,547.78	4,333.03	
BENZO(b)FLUORANTHENE	µg/kg	3	4,100.00	1,500.00	2,900.00	1,311.49	4,263.95	
BENZO(ghi)PERYLENE	µg/kg	3	1,900.00	630.00	1,410.00	682.86	2,120.18	
BENZO(k)FLUORANTHENE	µg/kg	3	3,700.00	690.00	2,363.33	1,532.98	3,957.63	
BENZOIC ACID	µg/kg	1	98.00	98.00	98.00			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	2	220.00	220.00	220.00	0.00	220.00	
CHRYSENE	µg/kg	3	4,600.00	1,200.00	3,133.33	1,747.38	4,950.61	
DI-n-BUTYL PHTHALATE	µg/kg	3	46.00	39.00	41.67	3.79	45.60	

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

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Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED125

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
DIBENZO(a,h)ANTHRACENE	µg/kg	3	930.00	220.00	620.00	363.46	997.99	
DIBENZOFURAN	µg/kg	3	740.00	230.00	530.00	266.65	807.31	
FLUORANTHENE	µg/kg	3	11,000.00	2,900.00	7,400.00	4,124.32	11,689.29	
FLUORENE	µg/kg	3	1,400.00	400.00	1,000.00	529.15	1,550.32	
INDENO(1,2,3-cd)PYRENE	µg/kg	3	1,800.00	440.00	1,280.00	734.30	2,043.67	
METHYLENE CHLORIDE	µg/kg	1	3.00	3.00	3.00			
NAPHTHALENE	µg/kg	3	870.00	300.00	640.00	300.50	952.52	
PHENANTHRENE	µg/kg	3	11,000.00	2,900.00	7,533.33	4,174.13	11,874.43	
PYRENE	µg/kg	3	13,000.00	3,100.00	8,300.00	4,968.90	13,467.66	

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/g	2	0.06	0.01	0.04	0.04	0.08	1.77
CESIUM-134	pCi/g	1	0.11	0.11	0.11			
CESIUM-137	pCi/g	3	0.70	0.15	0.51	0.31	0.83	1.54
GROSS ALPHA	pCi/g	3	26.52	2.20	11.76	12.97	25.25	87.54
GROSS BETA	pCi/g	3	247.10	6.46	87.67	138.08	231.27	66.83
PLUTONIUM-239/240	pCi/g	2	0.37	0.07	0.22	0.21	0.45	5.62
RADIUM-226	pCi/g	3	0.90	0.80	0.85	0.05	0.90	2.22
RADIUM-228	pCi/g	3	1.65	0.90	1.18	0.41	1.60	4.55
STRONTIUM-89,90	pCi/g	2	0.31	0.14	0.22	0.12	0.35	1.07
TRITIUM	pCi/L	3	457.46	0.00	199.12	234.41	442.91	1,030.59
URANIUM-233,-234	pCi/g	3	2.13	0.44	1.17	0.87	2.07	5.29
URANIUM-235	pCi/g	3	0.09	0.01	0.04	0.04	0.08	0.21
URANIUM-238	pCi/g	3	1.17	0.22	0.65	0.48	1.15	4.82

CHEMICAL GROUP: WATER QUALITY PARAMETERS

% SOLIDS	%	3	92.60	86.80	89.07	3.10	92.29	
ALKALINITY AS CaCO3	mg/kg	1	1,300.00	1,300.00	1,300.00			19,839.86
NITRATE/NITRITE	mg/kg	3	9.40	1.30	4.63	4.24	9.04	57.19
pH	pH	3	8.60	7.90	8.17	0.38	8.56	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED126

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
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CHEMICAL GROUP: METALS

ALUMINUM	mg/kg	3	12,000.00	9,920.00	10,673.33	1,152.45	11,871.88	21,387.27
ARSENIC	mg/kg	3	5.20	3.10	3.90	1.14	5.08	10.13
BARIUM	mg/kg	3	160.00	115.00	137.33	22.50	160.74	253.82
BERYLLIUM	mg/kg	3	0.84	0.72	0.78	0.06	0.84	11.65
CALCIUM	mg/kg	3	23,000.00	5,200.00	12,333.33	9,411.34	22,121.13	18,446.12
CHROMIUM	mg/kg	3	9.70	7.20	8.73	1.34	10.13	31.88
COBALT	mg/kg	3	8.90	7.70	8.17	0.64	8.84	16.43
COPPER	mg/kg	3	17.80	14.00	15.90	1.90	17.88	36.78
IRON	mg/kg	3	18,400.00	14,800.00	16,400.00	1,833.03	18,306.35	28,612.98
LEAD	mg/kg	3	18.50	16.00	17.50	1.32	18.88	138.09
LITHIUM	mg/kg	4	9.80	6.90	8.38	1.65	10.09	41.01
MAGNESIUM	mg/kg	3	3,100.00	2,320.00	2,640.00	408.41	3,064.75	5,358.56
MANGANESE	mg/kg	3	256.00	193.00	216.33	34.53	252.24	907.35
NICKEL	mg/kg	3	20.70	13.00	15.93	4.16	20.26	24.16
POTASSIUM	mg/kg	4	1,310.00	1,160.00	1,232.50	83.82	1,319.67	3,159.74
SELENIUM	mg/kg	3	0.34	0.24	0.31	0.06	0.37	2.18
SILICON	mg/kg	3	1,940.00	321.00	981.67	849.56	1,865.20	1,741.79
SODIUM	mg/kg	3	150.00	80.60	123.20	37.30	161.99	593.09
STRONTIUM	mg/kg	4	80.00	47.60	65.95	16.60	83.21	291.42
TIN	mg/kg	1	11.50	11.50	11.50			40.57
VANADIUM	mg/kg	3	28.10	23.30	26.47	2.74	29.32	63.39
ZINC	mg/kg	3	111.00	71.00	96.33	22.03	119.24	139.04

CHEMICAL GROUP: ORGANICS

ACETONE	µg/kg	1	49.00	49.00	49.00			
AROCLOR-1254	µg/kg	1	26.00	26.00	26.00			
BENZO(a)ANTHRACENE	µg/kg	3	120.00	53.00	75.33	38.68	115.56	
BENZO(a)PYRENE	µg/kg	2	57.00	57.00	57.00	0.00	57.00	
BENZO(b)FLUORANTHENE	µg/kg	3	210.00	84.00	126.00	72.75	201.66	
BENZO(k)FLUORANTHENE	µg/kg	3	83.00	72.00	75.67	6.35	82.27	
BENZOIC ACID	µg/kg	1	210.00	210.00	210.00			
BIS(2-ETHYLHEXYL)PHTHALATE	µg/kg	3	550.00	74.00	232.67	274.82	518.48	
CHRYSENE	µg/kg	3	170.00	73.00	105.33	56.00	163.58	
DI-n-BUTYL PHTHALATE	µg/kg	1	39.00	39.00	39.00			
FLUORANTHENE	µg/kg	4	190.00	60.00	110.00	55.83	168.06	
METHYLENE CHLORIDE	µg/kg	1	12.00	12.00	12.00			
PHENANTHRENE	µg/kg	3	150.00	94.00	112.67	32.33	146.29	
PYRENE	µg/kg	3	200.00	130.00	153.33	40.41	195.36	
TOLUENE	µg/kg	2	6.00	6.00	6.00	0.00	6.00	

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

FINAL

Summary Statistics for Sediment Data (Detects Only) 1991 - 1992

LOCATION: SED126

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value	99/99 UTL (1)
TOTAL XYLENES	µg/kg	2	5.00	5.00	5.00	0.00	5.00	
CHEMICAL GROUP: RADIONUCLIDES								
AMERICIUM-241	pCi/g	2	0.03	0.01	0.02	0.01	0.03	1.77
CESIUM-134	pCi/g	1	0.09	0.09	0.09			
CESIUM-137	pCi/g	3	0.11	0.00	0.06	0.06	0.12	1.54
GROSS ALPHA	pCi/g	3	7.28	3.24	5.07	2.05	7.19	87.54
GROSS BETA	pCi/g	3	18.61	4.81	11.97	6.91	19.16	66.83
PLUTONIUM-239/240	pCi/g	2	0.07	0.03	0.05	0.03	0.08	5.62
RADIUM-226	pCi/g	2	1.06	0.84	0.95	0.15	1.11	2.22
RADIUM-228	pCi/g	2	1.37	1.02	1.20	0.25	1.46	4.55
STRONTIUM-89,90	pCi/g	2	0.24	-0.04	0.10	0.20	0.31	1.07
TRITIUM	pCi/L	3	88.89	0.00	44.39	44.45	90.62	1,030.59
URANIUM-233,-234	pCi/g	3	1.06	0.15	0.58	0.46	1.06	5.29
URANIUM-235	pCi/g	3	0.07	0.00	0.02	0.04	0.06	0.21
URANIUM-238	pCi/g	3	0.92	0.12	0.47	0.40	0.89	4.82
CHEMICAL GROUP: WATER QUALITY PARAMETERS								
% SOLIDS	%	3	93.60	56.50	78.70	19.60	99.08	
ALKALINITY AS CaCO3	mg/kg	1	12,000.00	12,000.00	12,000.00			19,839.86
NITRATE/NITRITE	mg/kg	2	6.80	3.00	4.90	2.69	7.69	57.19
pH	pH	3	7.90	7.80	7.87	0.06	7.93	9.34

(1) From Background Geochemical Characterization Report (EG&G 1993d). UTL units reported in the Background Geochemical Characterization Report are the same as results units reported here except for tritium UTL units, which were reported as pCi/g.

APPENDIX B

**SUMMARY STATISTICS FOR SURFACE-WATER DATA -
DETECTS ONLY
FROM
ROCKY FLATS ENVIRONMENTAL
DATABASE SYSTEM (RFEDS)**

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW017

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	10	10,400.00	32.50	1,130.48	3,257.45	4,518.23
ANTIMONY	µg/L	2	21.60	18.00	19.80	2.55	22.45
ARSENIC	µg/L	2	3.00	0.80	1.90	1.56	3.52
BARIUM	µg/L	16	164.00	35.40	120.28	26.82	148.17
BERYLLIUM	µg/L	1	0.80	0.80	0.80		
CADMIUM	µg/L	1	3.20	3.20	3.20		
CALCIUM	µg/L	16	99,000.00	16,200.00	73,893.75	23,866.34	98,714.74
CESIUM	µg/L	2	60.00	50.00	55.00	7.07	62.35
CHROMIUM	µg/L	1	16.90	16.90	16.90		
COBALT	µg/L	1	9.30	9.30	9.30		
COPPER	µg/L	4	32.10	4.90	12.13	13.34	26.00
IRON	µg/L	14	14,000.00	29.00	1,494.43	3,616.72	5,255.82
LEAD	µg/L	8	79.00	1.00	16.18	28.20	45.51
LITHIUM	µg/L	13	43.20	6.50	18.15	12.52	31.17
MAGNESIUM	µg/L	16	22,000.00	3,150.00	17,176.88	5,501.42	22,898.35
MANGANESE	µg/L	16	650.00	53.60	435.54	158.75	600.64
NICKEL	µg/L	1	5.50	5.50	5.50		
POTASSIUM	µg/L	14	8,320.00	2,760.00	3,793.57	1,786.64	5,651.68
SELENIUM	µg/L	3	5.90	1.30	2.90	2.60	5.60
SILICON	µg/L	19	11,000.00	4,070.00	5,963.16	2,075.40	8,121.58
SODIUM	µg/L	16	50,700.00	33,000.00	42,718.75	5,571.14	48,512.74
STRONTIUM	µg/L	17	560.00	98.60	450.74	138.05	594.31
VANADIUM	µg/L	5	29.30	2.40	9.46	11.41	21.33
ZINC	µg/L	14	279.00	8.00	49.86	66.78	119.32

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	2	130.00	6.00	68.00	87.68	159.19
BENZENE	µg/L	1	2.00	2.00	2.00		
BIS(2-ETHYLHEXYL)PHTHALATE	µg/L	1	3.00	3.00	3.00		
DI-n-BUTYL PHTHALATE	µg/L	1	5.00	5.00	5.00		
METHYLENE CHLORIDE	µg/L	2	4.00	1.00	2.50	2.12	4.71
NITRATE/NITRITE	µg/L	1	1,230.00	1,230.00	1,230.00		
PHOSPHORUS	µg/L	1	54.30	54.30	54.30		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.01	0.01	0.01	0.00	0.01
CESIUM-137	pCi/L	6	0.32	-0.27	0.02	0.26	0.29
GROSS ALPHA	pCi/L	9	10.82	1.29	6.37	3.05	9.53
GROSS BETA	pCi/L	10	69.57	2.96	16.04	19.77	36.60
NEPTUNIUM-237	pCi/L	2	0.01	0.00	0.00	0.00	0.01
PLUTONIUM-239/240	pCi/L	7	0.03	0.00	0.01	0.01	0.02

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW017

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
RADIUM-226	pCi/L	2	1.00	0.07	0.53	0.66	1.22
STRONTIUM-89,90	pCi/L	6	1.14	0.34	0.73	0.33	1.08
TRITIUM	pCi/L	5	530.00	-93.90	182.06	225.34	416.42
URANIUM-233,-234	pCi/L	8	3.48	0.14	2.00	1.02	3.07
URANIUM-234	pCi/L	2	36.00	3.00	19.50	23.33	43.77
URANIUM-235	pCi/L	7	0.98	0.03	0.26	0.34	0.61
URANIUM-238	pCi/L	10	22.00	0.03	5.67	6.09	12.00

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	9	286.00	48.00	219.33	77.34	299.77
CARBONATE AS CaCO3	mg/L	3	4.00	0.00	1.67	2.08	3.83
CHLORIDE	mg/L	9	87.00	22.40	53.16	18.30	72.19
DISSOLVED ORGANIC CARBON	mg/L	8	17.00	2.00	7.41	6.08	13.74
FLUORIDE	mg/L	9	0.55	0.20	0.45	0.11	0.57
NITRATE/NITRITE	mg/L	9	5.00	0.15	2.06	1.38	3.50
NITRITE	mg/L	1	0.02	0.02	0.02		
OIL AND GREASE	mg/L	4	37.10	1.70	11.88	16.87	29.43
PHOSPHORUS	mg/L	2	0.30	0.03	0.17	0.19	0.36
SILICA	mg/L	2	6.00	1.20	3.60	3.39	7.13
SULFATE	mg/L	9	88.10	29.00	46.83	17.74	65.28
TOTAL DISSOLVED SOLIDS	mg/L	9	534.00	240.00	394.89	96.51	495.26
TOTAL ORGANIC CARBON	mg/L	8	10.00	3.00	5.65	2.82	8.58
TOTAL SUSPENDED SOLIDS	mg/L	8	300.00	2.00	53.38	101.08	158.50

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW018

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	10	196.00	24.00	86.64	53.43	142.21
ANTIMONY	µg/L	1	19.70	19.70	19.70		
BARIUM	µg/L	16	140.00	90.80	120.84	16.70	138.22
CADMIUM	µg/L	3	2.40	1.10	1.63	0.68	2.34
CALCIUM	µg/L	16	89,000.00	59,400.00	76,875.00	8,581.03	85,799.27
CESIUM	µg/L	3	60.00	50.00	56.67	5.77	62.67
CHROMIUM	µg/L	1	4.80	4.80	4.80		
COBALT	µg/L	1	2.70	2.70	2.70		
COPPER	µg/L	4	19.00	4.40	11.25	6.40	17.91
IRON	µg/L	16	531.00	8.50	212.99	175.10	395.10
LEAD	µg/L	9	3.20	1.30	2.27	0.68	2.98
LITHIUM	µg/L	15	21.70	5.60	8.19	3.87	12.21
MAGNESIUM	µg/L	16	17,700.00	11,500.00	15,150.00	1,893.50	17,119.24
MANGANESE	µg/L	16	248.00	100.00	163.63	41.75	207.05
MERCURY	µg/L	2	0.23	0.20	0.22	0.02	0.24
MOLYBDENUM	µg/L	1	11.40	11.40	11.40		
NICKEL	µg/L	2	12.00	10.00	11.00	1.41	12.47
POTASSIUM	µg/L	16	4,700.00	1,600.00	2,740.00	873.30	3,648.23
SILICON	µg/L	21	7,480.00	4,450.00	6,059.52	856.29	6,950.07
SODIUM	µg/L	16	37,100.00	25,000.00	29,887.50	3,738.43	33,775.46
STRONTIUM	µg/L	19	480.00	336.00	430.53	45.96	478.33
ZINC	µg/L	11	27.00	10.50	18.38	5.30	23.89

CHEMICAL GROUP: ORGANICS

CARBON TETRACHLORIDE	µg/L	2	8.00	4.00	6.00	2.83	8.94
CHLOROMETHANE	µg/L	1	130.00	130.00	130.00		
METHYLENE CHLORIDE	µg/L	2	36.00	5.00	20.50	21.92	43.30

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.01	0.00	0.00	0.00	0.01
CESIUM-137	pCi/L	6	1.50	0.07	0.40	0.54	0.97
GROSS ALPHA	pCi/L	8	12.00	2.92	6.03	2.64	8.77
GROSS BETA	pCi/L	9	104.25	5.70	18.99	32.04	52.31
NEPTUNIUM-237	pCi/L	2	-0.14	-0.40	-0.27	0.18	-0.08
PLUTONIUM-239/240	pCi/L	5	0.01	0.00	0.01	0.00	0.01
RADIUM-226	pCi/L	4	0.38	0.09	0.23	0.15	0.39
STRONTIUM-89,90	pCi/L	6	1.07	-0.35	0.39	0.45	0.86
TRITIUM	pCi/L	4	127.30	72.57	96.02	27.03	124.14
URANIUM-233,-234	pCi/L	7	3.44	0.62	2.26	0.88	3.17
URANIUM-234	pCi/L	2	3.10	1.50	2.30	1.13	3.48

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW018

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
URANIUM-235	pCi/L	6	0.22	-0.01	0.09	0.09	0.18
URANIUM-238	pCi/L	9	8.43	1.46	5.84	2.08	8.00
CHEMICAL GROUP: WATER QUALITY PARAMETERS							
BICARBONATE AS CaCO ₃	mg/L	10	288.00	145.00	223.80	41.28	266.73
CARBONATE AS CaCO ₃	mg/L	1	12.30	12.30	12.30		
CHLORIDE	mg/L	9	67.00	34.30	49.80	10.59	60.82
DISSOLVED ORGANIC CARBON	mg/L	8	6.90	2.00	4.39	2.15	6.62
FLUORIDE	mg/L	9	0.64	0.48	0.52	0.05	0.58
NITRATE/NITRITE	mg/L	9	2.10	0.89	1.54	0.44	2.00
OIL AND GREASE	mg/L	1	13.10	13.10	13.10		
PHOSPHORUS	mg/L	1	0.74	0.74	0.74		
SULFATE	mg/L	9	40.20	25.80	32.38	4.74	37.30
TOTAL DISSOLVED SOLIDS	mg/L	9	396.00	312.00	355.78	26.05	382.87
TOTAL ORGANIC CARBON	mg/L	8	4.60	2.00	3.61	0.88	4.53
TOTAL SUSPENDED SOLIDS	mg/L	4	10.00	5.00	6.75	2.36	9.21

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW019

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	2	6,290.00	411.00	3,350.50	4,157.08	7,673.86
BARIUM	µg/L	4	68.60	12.20	40.65	25.89	67.58
CALCIUM	µg/L	4	16,700.00	10,900.00	13,025.00	2,531.63	15,657.90
CHROMIUM	µg/L	1	12.80	12.80	12.80		
COBALT	µg/L	1	5.40	5.40	5.40		
COPPER	µg/L	2	16.20	7.10	11.65	6.43	18.34
IRON	µg/L	4	6,400.00	106.00	2,133.25	2,964.18	5,216.00
LEAD	µg/L	3	29.10	3.10	12.60	14.34	27.52
LITHIUM	µg/L	2	6.90	2.00	4.45	3.46	8.05
MAGNESIUM	µg/L	4	4,850.00	1,150.00	2,467.50	1,716.32	4,252.47
MANGANESE	µg/L	4	193.00	4.80	77.50	87.34	168.34
MOLYBDENUM	µg/L	1	10.60	10.60	10.60		
POTASSIUM	µg/L	4	21,600.00	3,280.00	12,247.50	9,849.66	22,491.15
SILICON	µg/L	4	14,700.00	969.00	6,159.75	6,209.12	12,617.23
SODIUM	µg/L	4	64,000.00	15,800.00	39,875.00	27,285.33	68,251.74
STRONTIUM	µg/L	4	113.00	55.20	73.70	26.51	101.27
VANADIUM	µg/L	1	18.60	18.60	18.60		
ZINC	µg/L	3	144.00	7.20	61.63	72.55	137.09

CHEMICAL GROUP: ORGANICS

alpha-BHC	µg/L	1	0.01	0.01	0.01		
BIS(2-ETHYLHEXYL)PHTHALATE	µg/L	1	2.00	2.00	2.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.27	0.00	0.14	0.19	0.33
CESIUM-137	pCi/L	2	0.26	0.26	0.26	0.00	0.26
GROSS ALPHA	pCi/L	2	4.50	1.40	2.95	2.19	5.23
GROSS BETA	pCi/L	2	26.00	6.65	16.33	13.68	30.55
NEPTUNIUM-237	pCi/L	1	0.42	0.42	0.42		
PLUTONIUM-239/240	pCi/L	1	0.01	0.01	0.01		
STRONTIUM-89,90	pCi/L	1	0.36	0.36	0.36		
TRITIUM	pCi/L	1	241.70	241.70	241.70		
URANIUM-233,-234	pCi/L	1	0.48	0.48	0.48		
URANIUM-234	pCi/L	1	0.49	0.49	0.49		
URANIUM-235	pCi/L	1	0.05	0.05	0.05		
URANIUM-238	pCi/L	2	0.30	0.22	0.26	0.06	0.32

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	2	52.40	25.70	39.05	18.88	58.68
CHLORIDE	mg/L	2	123.00	22.50	72.75	71.06	146.66

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW019

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
DISSOLVED ORGANIC CARBON	mg/L	1	6.30	6.30	6.30		
FLUORIDE	mg/L	2	0.24	0.16	0.20	0.06	0.26
NITRATE/NITRITE	mg/L	2	3.00	1.70	2.35	0.92	3.31
NITRITE	mg/L	2	0.06	0.03	0.04	0.02	0.06
ORTHOPHOSPHATE	mg/L	2	0.33	0.33	0.33	0.00	0.33
PHOSPHORUS	mg/L	2	0.76	0.26	0.51	0.35	0.88
SULFATE	mg/L	2	43.00	9.40	26.20	23.76	50.91
TOTAL DISSOLVED SOLIDS	mg/L	2	292.00	118.00	205.00	123.04	332.96
TOTAL ORGANIC CARBON	mg/L	2	6.00	5.90	5.95	0.07	6.02
TOTAL SUSPENDED SOLIDS	mg/L	2	110.00	15.00	62.50	67.18	132.36

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW020

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	3	13,000.00	38.40	4,759.47	7,161.76	12,207.69
ARSENIC	µg/L	1	1.60	1.60	1.60		
BARIIUM	µg/L	3	94.50	17.30	46.57	41.85	90.09
BERYLLIUM	µg/L	1	0.70	0.70	0.70		
CALCIUM	µg/L	4	18,800.00	8,110.00	12,927.50	4,596.05	17,707.39
CHROMIUM	µg/L	1	10.80	10.80	10.80		
COBALT	µg/L	1	4.10	4.10	4.10		
COPPER	µg/L	4	19.70	5.50	12.28	7.42	19.99
IRON	µg/L	4	12,200.00	89.40	3,393.23	5,893.98	9,522.96
LEAD	µg/L	4	26.40	1.90	10.03	11.30	21.77
LITHIUM	µg/L	2	10.40	2.00	6.20	5.94	12.38
MAGNESIUM	µg/L	4	4,080.00	864.00	1,926.00	1,470.69	3,455.52
MANGANESE	µg/L	4	149.00	6.20	44.95	69.50	117.23
NICKEL	µg/L	2	20.60	15.50	18.05	3.61	21.80
POTASSIUM	µg/L	4	6,750.00	1,190.00	4,327.50	2,331.84	6,752.62
SILICON	µg/L	4	29,300.00	1,030.00	9,085.00	13,567.56	23,195.26
SODIUM	µg/L	4	32,900.00	7,470.00	22,667.50	12,491.58	35,658.74
STRONTIUM	µg/L	4	88.80	40.10	63.55	21.73	86.14
VANADIUM	µg/L	1	30.30	30.30	30.30		
ZINC	µg/L	3	164.00	16.20	73.70	79.17	156.04

CHEMICAL GROUP: ORGANICS

alpha-BHC	µg/L	1	0.01	0.01	0.01		
BIS(2-ETHYLHEXYL)PHTHALATE	µg/L	1	2.00	2.00	2.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.04	0.03	0.03	0.01	0.04
CESIUM-137	pCi/L	2	0.27	-0.05	0.11	0.23	0.35
GROSS ALPHA	pCi/L	2	5.40	1.57	3.48	2.71	6.30
GROSS BETA	pCi/L	2	14.00	6.32	10.16	5.43	15.81
NEPTUNIUM-237	pCi/L	1	0.04	0.04	0.04		
PLUTONIUM-239/240	pCi/L	2	0.15	0.14	0.14	0.01	0.15
STRONTIUM-89,90	pCi/L	1	0.67	0.67	0.67		
TRITIUM	pCi/L	1	234.00	234.00	234.00		
URANIUM-233,-234	pCi/L	1	0.34	0.34	0.34		
URANIUM-234	pCi/L	1	0.40	0.40	0.40		
URANIUM-235	pCi/L	1	-0.02	-0.02	-0.02		
URANIUM-238	pCi/L	2	0.48	0.14	0.31	0.24	0.56

CHEMICAL GROUP: WATER QUALITY PARAMETERS

FINAL

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW020

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
BICARBONATE AS CaCO3	mg/L	2	45.60	27.50	36.55	12.80	49.86
CHLORIDE	mg/L	2	56.50	9.80	33.15	33.02	67.49
DISSOLVED ORGANIC CARBON	mg/L	2	7.40	7.10	7.25	0.21	7.47
FLUORIDE	mg/L	2	0.21	0.15	0.18	0.04	0.22
NITRATE/NITRITE	mg/L	2	1.30	0.87	1.09	0.30	1.40
NITRITE	mg/L	1	0.06	0.06	0.06		
ORTHOPHOSPHATE	mg/L	2	0.31	0.31	0.31	0.00	0.31
PHOSPHORUS	mg/L	2	0.46	0.30	0.38	0.11	0.50
SULFATE	mg/L	2	69.60	6.10	37.85	44.90	84.55
TOTAL DISSOLVED SOLIDS	mg/L	2	194.00	68.00	131.00	89.10	223.66
TOTAL ORGANIC CARBON	mg/L	2	6.20	6.00	6.10	0.14	6.25
TOTAL SUSPENDED SOLIDS	mg/L	2	244.00	70.00	157.00	123.04	284.96

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW022

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	10	35,100.00	47.20	17,102.02	12,762.90	30,375.44
ANTIMONY	µg/L	1	40.20	40.20	40.20		
ARSENIC	µg/L	4	6.00	3.00	4.60	1.32	5.98
BARIUM	µg/L	10	465.00	14.20	203.85	157.74	367.90
BERYLLIUM	µg/L	5	2.70	1.40	2.02	0.59	2.64
CADMIUM	µg/L	3	3.90	2.00	2.97	0.95	3.96
CALCIUM	µg/L	10	106,000.00	9,950.00	47,675.00	33,104.32	82,103.50
CESIUM	µg/L	1	50.00	50.00	50.00		
CHROMIUM	µg/L	8	49.20	4.80	25.01	14.49	40.08
COBALT	µg/L	8	21.50	2.10	10.66	6.40	17.32
COPPER	µg/L	9	71.60	6.50	40.23	23.63	64.81
IRON	µg/L	10	38,700.00	80.50	16,802.05	13,126.74	30,453.86
LEAD	µg/L	9	125.00	10.00	61.09	39.12	101.78
LITHIUM	µg/L	8	27.40	7.30	15.73	6.73	22.72
MAGNESIUM	µg/L	10	15,900.00	1,230.00	7,470.00	4,670.89	12,327.72
MANGANESE	µg/L	10	894.00	4.10	346.62	313.53	672.69
MOLYBDENUM	µg/L	1	30.00	30.00	30.00		
NICKEL	µg/L	7	45.70	11.00	23.90	11.57	35.93
POTASSIUM	µg/L	10	8,610.00	2,410.00	5,418.00	2,083.10	7,584.42
SILICON	µg/L	2	1,770.00	1,700.00	1,735.00	49.50	1,786.48
SODIUM	µg/L	10	19,000.00	4,700.00	9,554.00	4,033.00	13,748.32
STRONTIUM	µg/L	10	288.00	45.20	163.16	80.07	246.43
TIN	µg/L	2	30.80	26.70	28.75	2.90	31.77
VANADIUM	µg/L	8	93.80	13.00	54.26	26.01	81.32
ZINC	µg/L	9	560.00	69.10	299.90	176.29	483.24

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.01	0.01	0.01		
CESIUM-137	pCi/L	1	-0.06	-0.06	-0.06		
GROSS ALPHA	pCi/L	17	31.00	-1.00	5.56	7.42	13.27
GROSS BETA	pCi/L	22	36.00	1.99	9.40	8.47	18.21
PLUTONIUM-239/240	pCi/L	1	0.04	0.04	0.04		
STRONTIUM-89,90	pCi/L	1	0.82	0.82	0.82		
TRITIUM	pCi/L	35	211.80	-42.90	45.02	71.98	119.87
URANIUM-233,-234	pCi/L	1	0.08	0.08	0.08		
URANIUM-235	pCi/L	1	-0.01	-0.01	-0.01		
URANIUM-238	pCi/L	1	0.35	0.35	0.35		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

ALKALINITY AS CaCO3	mg/L	8	110.00	42.00	61.63	21.71	84.21
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Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW022

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
BICARBONATE AS CaCO ₃	mg/L	12	260.00	42.00	98.08	73.84	174.87
CARBONATE AS CaCO ₃	mg/L	1	2.00	2.00	2.00		
CHLORIDE	mg/L	12	19.00	4.00	8.96	4.11	13.23
FLUORIDE	mg/L	4	0.30	0.19	0.22	0.05	0.28
NITRATE/NITRITE	mg/L	12	1.70	0.67	1.19	0.34	1.55
NITRITE	mg/L	11	0.56	0.03	0.13	0.15	0.28
ORTHOPHOSPHATE	mg/L	8	0.17	0.03	0.07	0.05	0.12
PHOSPHORUS	mg/L	1	0.09	0.09	0.09		
SILICA	mg/L	3	1.00	1.00	1.00	0.00	1.00
SULFATE	mg/L	10	19.00	6.00	11.74	4.41	16.33
TOTAL DISSOLVED SOLIDS	mg/L	13	160.00	82.00	115.08	23.50	139.52
TOTAL SUSPENDED SOLIDS	mg/L	12	2,500.00	36.00	856.58	954.55	1,849.32

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW023

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	25	39,000.00	13.00	5,217.73	9,751.51	15,359.31
ANTIMONY	µg/L	5	20.30	15.90	18.30	1.89	20.27
ARSENIC	µg/L	7	10.00	1.20	5.00	2.89	8.01
BARIUM	µg/L	30	400.00	50.00	128.34	70.16	201.31
BERYLLIUM	µg/L	4	2.30	0.70	1.43	0.67	2.12
CADMIUM	µg/L	4	2.30	1.20	1.75	0.58	2.35
CALCIUM	µg/L	30	95,000.00	17,000.00	61,093.33	21,579.04	83,535.54
CESIUM	µg/L	5	110.00	50.00	66.00	25.10	92.10
CHROMIUM	µg/L	9	36.00	4.20	16.29	9.35	26.02
COBALT	µg/L	7	19.00	2.40	8.83	5.42	14.46
COPPER	µg/L	19	88.00	2.10	21.87	23.55	46.36
IRON	µg/L	28	34,000.00	17.00	4,964.60	8,955.20	14,278.01
LEAD	µg/L	25	75.00	1.00	13.68	21.75	36.30
LITHIUM	µg/L	29	21.00	3.70	10.50	3.53	14.17
MAGNESIUM	µg/L	30	25,000.00	3,500.00	15,420.00	6,094.79	21,758.58
MANGANESE	µg/L	30	1,300.00	13.30	189.22	327.01	529.31
MERCURY	µg/L	2	0.36	0.34	0.35	0.01	0.36
MOLYBDENUM	µg/L	8	43.00	3.70	13.93	13.30	27.76
NICKEL	µg/L	8	31.00	6.40	16.34	7.67	24.32
POTASSIUM	µg/L	30	8,600.00	1,700.00	3,499.67	2,012.80	5,592.98
SELENIUM	µg/L	15	6.90	1.40	3.19	1.36	4.61
SILICON	µg/L	22	5,490.00	1,700.00	3,915.45	1,178.59	5,141.19
SILVER	µg/L	1	3.20	3.20	3.20		
SODIUM	µg/L	30	105,000.00	4,600.00	41,860.00	21,785.25	64,516.66
STRONTIUM	µg/L	30	668.00	100.00	410.20	171.19	588.24
TIN	µg/L	3	19.30	16.10	18.00	1.68	19.75
VANADIUM	µg/L	15	95.00	2.10	24.05	27.34	52.49
ZINC	µg/L	26	1,200.00	2.80	177.85	278.76	467.76

CHEMICAL GROUP: ORGANICS

1,2-DICHLOROETHENE	µg/L	1	1.00	1.00	1.00		
METHYLENE CHLORIDE	µg/L	1	2.00	2.00	2.00		
TETRACHLOROETHANE	µg/L	1	5.00	5.00	5.00		
THALLIUM	µg/L	1	1.00	1.00	1.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.17	0.00	0.04	0.07	0.11
CESIUM-137	pCi/L	8	1.10	0.11	0.41	0.35	0.77
GROSS ALPHA	pCi/L	25	17.15	1.83	5.76	3.51	9.41
GROSS BETA	pCi/L	25	20.00	3.00	8.19	4.36	12.72

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW023

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
NEPTUNIUM-237	pCi/L	3	0.04	-0.01	0.02	0.03	0.05
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	-0.02	-0.02	-0.02		
PLUTONIUM-239/240	pCi/L	8	0.04	0.00	0.01	0.01	0.02
RADIUM-226	pCi/L	6	1.40	0.10	0.38	0.51	0.91
STRONTIUM-89	pCi/L	1	0.05	0.05	0.05		
STRONTIUM-89,90	pCi/L	8	6.63	0.21	1.34	2.15	3.58
STRONTIUM-90	pCi/L	2	0.83	0.28	0.55	0.39	0.96
TRITIUM	pCi/L	29	890.00	-26.10	160.07	167.25	334.01
URANIUM-233,-234	pCi/L	8	5.04	0.52	3.31	1.32	4.69
URANIUM-234	pCi/L	4	3.40	2.70	3.05	0.29	3.35
URANIUM-235	pCi/L	9	0.44	0.02	0.15	0.14	0.30
URANIUM-238	pCi/L	12	4.57	0.44	2.63	0.97	3.64

CHEMICAL GROUP: WATER QUALITY PARAMETERS

ALKALINITY AS CaCO3	mg/L	11	160.00	58.00	85.55	28.46	115.14
AMMONIA	mg/L	1	0.70	0.70	0.70		
BICARBONATE AS CaCO3	mg/L	24	301.00	30.00	149.88	84.41	237.66
CARBONATE AS CaCO3	mg/L	4	12.50	0.00	3.63	5.99	9.86
CHLORIDE	mg/L	23	250.00	5.00	60.68	63.47	126.69
DISSOLVED ORGANIC CARBO	mg/L	12	5.00	1.80	3.15	1.17	4.37
FLUORIDE	mg/L	13	0.93	0.08	0.71	0.22	0.94
NITRATE/NITRITE	mg/L	23	5.40	0.40	2.72	1.55	4.33
NITRITE	mg/L	9	0.11	0.02	0.05	0.03	0.08
OIL AND GREASE	mg/L	4	56.00	0.20	16.45	26.70	44.22
ORTHOPHOSPHATE	mg/L	3	0.15	0.01	0.10	0.08	0.18
PHOSPHORUS	mg/L	4	0.05	0.01	0.03	0.02	0.05
SILICA	mg/L	3	5.20	2.80	4.03	1.20	5.28
SULFATE	mg/L	20	69.90	10.00	34.11	16.81	51.59
TOTAL DISSOLVED SOLIDS	mg/L	21	1,530.00	74.00	374.38	312.11	698.97
TOTAL ORGANIC CARBON	mg/L	12	4.00	1.40	2.68	1.11	3.84
TOTAL SUSPENDED SOLIDS	mg/L	17	1,050.00	3.00	188.06	287.87	487.44

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW030

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	3	667.00	23.00	356.67	322.63	692.21
BARIUM	µg/L	4	102.00	54.70	75.68	19.71	96.17
BERYLLIUM	µg/L	1	0.50	0.50	0.50		
CALCIUM	µg/L	4	51,000.00	45,400.00	49,100.00	2,511.31	51,711.76
CESIUM	µg/L	2	50.00	50.00	50.00	0.00	50.00
COPPER	µg/L	3	7.00	3.30	5.40	1.90	7.38
IRON	µg/L	4	661.00	35.00	320.90	331.74	665.91
LEAD	µg/L	3	2.20	1.80	2.03	0.21	2.25
LITHIUM	µg/L	3	9.90	6.00	8.37	2.08	10.53
MAGNESIUM	µg/L	4	10,800.00	10,000.00	10,225.00	386.22	10,626.67
MANGANESE	µg/L	4	71.00	19.00	33.63	24.97	59.60
MOLYBDENUM	µg/L	1	3.20	3.20	3.20		
NICKEL	µg/L	1	5.00	5.00	5.00		
POTASSIUM	µg/L	4	2,960.00	2,540.00	2,825.00	192.09	3,024.78
SILICON	µg/L	7	5,200.00	3,670.00	4,690.00	703.49	5,421.63
SODIUM	µg/L	4	22,000.00	19,600.00	21,050.00	1,170.47	22,267.29
STRONTIUM	µg/L	5	300.00	270.00	284.40	13.67	298.61
ZINC	µg/L	3	37.60	4.60	17.00	17.96	35.68

CHEMICAL GROUP: ORGANICS

beta-BHC	µg/L	1	0.02	0.02	0.02		
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CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.02	0.01	0.01	0.01	0.02
CESIUM-137	pCi/L	1	-0.33	-0.33	-0.33		
GROSS ALPHA	pCi/L	2	6.80	2.48	4.64	3.06	7.82
GROSS BETA	pCi/L	2	7.20	6.32	6.76	0.62	7.41
PLUTONIUM-239/240	pCi/L	2	0.04	0.01	0.02	0.02	0.04
RADIUM-226	pCi/L	1	0.20	0.20	0.20		
STRONTIUM-89,90	pCi/L	2	1.12	0.44	0.78	0.48	1.28
TRITIUM	pCi/L	2	350.00	210.60	280.30	98.57	382.81
URANIUM-233,-234	pCi/L	2	1.41	1.40	1.40	0.01	1.41
URANIUM-235	pCi/L	1	0.05	0.05	0.05		
URANIUM-238	pCi/L	2	1.85	1.70	1.77	0.11	1.88

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	2	169.00	139.00	154.00	21.21	176.06
CHLORIDE	mg/L	2	36.40	34.80	35.60	1.13	36.78
FLUORIDE	mg/L	2	0.58	0.47	0.52	0.08	0.61
NITRATE/NITRITE	mg/L	1	0.12	0.12	0.12		

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW030

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
OIL AND GREASE	mg/L	1	13.40	13.40	13.40		
PHOSPHORUS	mg/L	1	0.09	0.09	0.09		
SULFATE	mg/L	2	26.50	20.40	23.45	4.31	27.94
TOTAL DISSOLVED SOLIDS	mg/L	2	258.00	240.00	249.00	12.73	262.24
TOTAL ORGANIC CARBON	mg/L	1	7.00	7.00	7.00		
TOTAL SUSPENDED SOLIDS	mg/L	3	88.00	10.00	36.00	45.03	82.83

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW031

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	7	270.00	20.00	145.43	111.01	260.87
ANTIMONY	µg/L	1	12.00	12.00	12.00		
BARIUM	µg/L	8	130.00	89.70	112.45	15.89	128.98
BERYLLIUM	µg/L	2	0.60	0.60	0.60	0.00	0.60
CADMIUM	µg/L	1	1.40	1.40	1.40		
CALCIUM	µg/L	8	84,000.00	50,900.00	71,725.00	13,287.02	85,543.50
CESIUM	µg/L	3	110.00	50.00	76.67	30.55	108.44
COPPER	µg/L	3	3.10	2.40	2.77	0.35	3.13
IRON	µg/L	7	340.00	22.70	168.81	125.66	299.50
LEAD	µg/L	5	5.00	1.70	2.86	1.27	4.18
LITHIUM	µg/L	8	12.00	7.40	9.46	1.40	10.91
MAGNESIUM	µg/L	8	17,000.00	11,800.00	14,725.00	1,875.98	16,676.01
MANGANESE	µg/L	8	27.00	13.00	19.29	4.91	24.40
MERCURY	µg/L	1	0.53	0.53	0.53		
POTASSIUM	µg/L	8	2,700.00	1,900.00	2,220.00	289.28	2,520.86
SILICON	µg/L	12	7,280.00	1,750.00	6,061.67	1,926.64	8,065.37
SODIUM	µg/L	8	34,000.00	27,000.00	29,987.50	2,508.52	32,596.36
STRONTIUM	µg/L	8	500.00	322.00	416.75	65.05	484.41
ZINC	µg/L	7	36.00	4.00	20.00	10.31	30.72

CHEMICAL GROUP: ORGANICS

TETRACHLOROETHANE	µg/L	1	6.00	6.00	6.00		
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CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.00	0.00	0.00	0.00	0.00
CESIUM-137	pCi/L	2	0.29	0.01	0.15	0.20	0.35
GROSS ALPHA	pCi/L	3	4.90	3.40	3.94	0.83	4.81
GROSS BETA	pCi/L	4	5.50	3.80	4.59	0.91	5.53
NEPTUNIUM-237	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	2	0.01	0.00	0.01	0.01	0.01
STRONTIUM-89,90	pCi/L	1	0.37	0.37	0.37		
TRITIUM	pCi/L	1	61.95	61.95	61.95		
URANIUM-233, 234	pCi/L	3	2.90	2.30	2.50	0.34	2.86
URANIUM-234	pCi/L	1	2.90	2.90	2.90		
URANIUM-235	pCi/L	2	0.18	0.10	0.14	0.06	0.20
URANIUM-238	pCi/L	4	2.40	1.70	2.04	0.29	2.34

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	5	256.00	188.00	213.00	30.02	244.22
CHLORIDE	mg/L	4	67.50	59.30	63.85	3.41	67.40

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW031

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
DISSOLVED ORGANIC CARBO	mg/L	8	7.40	2.00	4.24	2.08	6.40
FLUORIDE	mg/L	4	0.71	0.60	0.66	0.05	0.71
NITRATE/NITRITE	mg/L	5	4.20	1.80	2.70	0.90	3.64
ORTHOPHOSPHATE	mg/L	2	0.06	0.06	0.06	0.00	0.06
SULFATE	mg/L	4	49.40	32.10	38.05	7.78	46.14
TOTAL DISSOLVED SOLIDS	mg/L	4	434.00	334.00	394.00	42.93	438.64
TOTAL ORGANIC CARBON	mg/L	8	5.00	1.00	3.25	1.32	4.62
TOTAL SUSPENDED SOLIDS	mg/L	5	11.00	6.00	7.40	2.07	9.56

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW035

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	14	11,000.00	27.00	1,905.89	2,969.07	4,993.72
ANTIMONY	µg/L	2	56.10	41.90	49.00	10.04	59.44
ARSENIC	µg/L	1	2.20	2.20	2.20		
BARIUM	µg/L	23	415.00	36.00	134.57	93.27	231.57
BERYLLIUM	µg/L	2	0.80	0.60	0.70	0.14	0.85
CADMIUM	µg/L	3	2.90	1.10	1.90	0.92	2.85
CALCIUM	µg/L	23	90,000.00	24,600.00	66,856.52	17,273.89	84,821.36
CESIUM	µg/L	4	70.00	50.00	62.50	9.57	72.46
CHROMIUM	µg/L	4	66.00	3.30	21.90	29.53	52.61
COBALT	µg/L	4	7.50	2.30	4.10	2.34	6.53
COPPER	µg/L	16	51.90	2.40	14.31	14.39	29.28
IRON	µg/L	19	10,700.00	17.90	1,385.29	2,547.60	4,034.80
LEAD	µg/L	20	24.10	0.90	4.57	5.85	10.65
LITHIUM	µg/L	22	16.50	3.20	7.44	2.61	10.15
MAGNESIUM	µg/L	23	18,700.00	4,020.00	11,884.35	3,881.70	15,921.32
MANGANESE	µg/L	23	487.00	17.00	120.27	108.27	232.87
MERCURY	µg/L	1	1.00	1.00	1.00		
MOLYBDENUM	µg/L	1	8.80	8.80	8.80		
NICKEL	µg/L	3	50.00	6.70	23.60	23.16	47.69
POTASSIUM	µg/L	22	5,580.00	1,060.00	2,545.91	1,175.80	3,768.74
SELENIUM	µg/L	1	1.20	1.20	1.20		
SILICON	µg/L	26	29,400.00	1,030.00	7,126.15	5,168.61	12,501.51
SILVER	µg/L	1	4.90	4.90	4.90		
SODIUM	µg/L	23	49,200.00	12,800.00	22,634.78	9,556.08	32,573.11
STRONTIUM	µg/L	25	485.00	120.00	344.84	96.26	444.95
TIN	µg/L	2	16.00	16.00	16.00	0.00	16.00
VANADIUM	µg/L	14	32.00	2.30	10.44	11.26	22.15
ZINC	µg/L	20	362.00	3.60	72.22	88.24	164.00

CHEMICAL GROUP: ORGANICS

1,2-DICHLOROETHANE	µg/L	1	3.00	3.00	3.00		
2-BUTANONE	µg/L	1	12.00	12.00	12.00		
BENZYL ALCOHOL	µg/L	1	3.00	3.00	3.00		
beta-BHC	µg/L	2	0.17	0.17	0.17	0.00	0.17
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	2	2.00	2.00	2.00	0.00	2.00
ETHYLPHENOL	µg/L	1	5.00	5.00	5.00		
HYDROXY BENZALDEHYDE	µg/L	1	6.00	6.00	6.00		
TRICHLOROETHENE	µg/L	1	13.00	13.00	13.00		

CHEMICAL GROUP: RADIONUCLIDES

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW035

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
AMERICIUM-241	pCi/L	7	0.05	0.00	0.01	0.02	0.03
CESIUM-137	pCi/L	7	1.16	-0.16	0.37	0.48	0.87
GROSS ALPHA	pCi/L	10	8.35	1.80	4.36	2.19	6.63
GROSS BETA	pCi/L	9	14.00	2.62	6.42	4.16	10.75
NEPTUNIUM-237	pCi/L	2	0.25	0.22	0.24	0.02	0.26
PLUTONIUM-236	pCi/L	1	0.02	0.02	0.02		
PLUTONIUM-238	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	9	0.01	0.00	0.00	0.00	0.01
RADIUM-226	pCi/L	1	1.40	1.40	1.40		
STRONTIUM-89	pCi/L	1	0.36	0.36	0.36		
STRONTIUM-89,90	pCi/L	5	6.65	0.12	1.71	2.77	4.59
STRONTIUM-90	pCi/L	1	0.14	0.14	0.14		
TRITIUM	pCi/L	8	250.00	73.42	138.70	61.14	202.29
URANIUM-233,-234	pCi/L	8	2.59	0.92	1.42	0.54	1.98
URANIUM-234	pCi/L	3	2.80	0.59	1.90	1.16	3.10
URANIUM-235	pCi/L	7	0.17	-0.01	0.07	0.06	0.13
URANIUM-238	pCi/L	11	7.89	0.86	2.23	1.95	4.26

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	12	200.00	73.90	153.83	39.60	195.01
CHLORIDE	mg/L	12	74.30	22.10	47.20	16.08	63.92
DISSOLVED ORGANIC CARBO	mg/L	11	20.40	4.00	11.79	7.35	19.43
FLUORIDE	mg/L	12	0.97	0.37	0.52	0.17	0.69
NITRATE/NITRITE	mg/L	12	5.50	0.18	2.66	1.39	4.10
NITRITE	mg/L	11	0.20	0.03	0.08	0.05	0.13
OIL AND GREASE	mg/L	1	10.50	10.50	10.50		
ORTHOPHOSPHATE	mg/L	1	0.47	0.47	0.47		
PHOSPHORUS	mg/L	7	0.90	0.06	0.32	0.32	0.65
SULFATE	mg/L	12	83.00	16.40	38.90	20.72	60.45
SULFIDE	mg/L	1	1.10	1.10	1.10		
TOTAL DISSOLVED SOLIDS	mg/L	12	658.00	240.00	376.67	137.30	519.46
TOTAL ORGANIC CARBON	mg/L	12	16.00	5.00	11.26	3.76	15.17
TOTAL SUSPENDED SOLIDS	mg/L	14	326.00	7.50	94.93	107.64	206.87

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW036

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	8	210.00	15.00	130.21	67.86	200.79
ANTIMONY	µg/L	1	11.00	11.00	11.00		
ARSENIC	µg/L	3	5.90	3.60	4.40	1.30	5.75
BARIUM	µg/L	14	160.00	96.40	119.99	18.92	139.66
BERYLLIUM	µg/L	4	0.60	0.40	0.53	0.10	0.62
CADMIUM	µg/L	1	3.60	3.60	3.60		
CALCIUM	µg/L	14	93,700.00	55,600.00	68,564.29	11,418.04	80,439.05
CESIUM	µg/L	2	60.00	50.00	55.00	7.07	62.35
COPPER	µg/L	7	9.20	2.30	4.79	2.22	7.09
IRON	µg/L	12	270.00	22.80	135.73	108.23	248.29
LEAD	µg/L	8	7.30	0.80	2.79	2.30	5.18
LITHIUM	µg/L	11	12.70	4.10	7.28	3.02	10.42
MAGNESIUM	µg/L	14	27,100.00	14,000.00	19,478.57	3,877.58	23,511.26
MANGANESE	µg/L	12	170.00	2.10	36.92	49.14	88.02
MERCURY	µg/L	2	1.00	0.20	0.60	0.57	1.19
MOLYBDENUM	µg/L	3	4.40	4.00	4.17	0.21	4.38
POTASSIUM	µg/L	14	5,000.00	2,570.00	3,600.00	883.74	4,519.09
SILICON	µg/L	16	9,990.00	477.00	5,187.25	3,405.92	8,729.41
SODIUM	µg/L	14	36,500.00	9,770.00	18,983.57	7,333.32	26,610.23
STRONTIUM	µg/L	14	614.00	339.00	453.64	85.58	542.64
VANADIUM	µg/L	1	2.60	2.60	2.60		
ZINC	µg/L	7	8.00	3.00	5.49	1.69	7.25

CHEMICAL GROUP: ORGANICS

BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	2.00	2.00	2.00		
TRICHLOROETHENE	µg/L	1	8.00	8.00	8.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.02	0.01	0.01	0.00	0.02
CESIUM-137	pCi/L	3	0.32	-0.14	0.06	0.24	0.31
GROSS ALPHA	pCi/L	7	11.71	3.20	7.15	3.37	10.66
GROSS BETA	pCi/L	7	16.12	6.50	11.92	3.36	15.42
NEPTUNIUM-237	pCi/L	2	0.25	-0.04	0.11	0.21	0.32
PLUTONIUM-236	pCi/L	2	0.00	0.00	0.00	0.00	0.00
PLUTONIUM-238	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	4	0.34	0.00	0.09	0.17	0.26
RADIUM-226	pCi/L	1	0.07	0.07	0.07		
STRONTIUM-89	pCi/L	1	-0.25	-0.25	-0.25		
STRONTIUM-89,90	pCi/L	3	6.48	0.41	3.29	3.05	6.46
STRONTIUM-90	pCi/L	1	0.06	0.06	0.06		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW036

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TRITIUM	pCi/L	5	339.00	110.00	186.90	90.19	280.69
URANIUM-233,-234	pCi/L	4	14.53	0.25	5.44	6.28	11.98
URANIUM-234	pCi/L	3	3.80	3.30	3.63	0.29	3.93
URANIUM-235	pCi/L	4	0.31	0.20	0.25	0.04	0.29
URANIUM-238	pCi/L	7	54.58	0.01	14.55	18.13	33.41

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	8	244.00	16.90	170.11	69.58	242.48
CHLORIDE	mg/L	8	61.20	25.90	43.61	12.76	56.88
DISSOLVED ORGANIC CARBO	mg/L	9	11.50	4.00	7.93	2.42	10.45
FLUORIDE	mg/L	8	0.66	0.50	0.59	0.07	0.66
NITRATE/NITRITE	mg/L	1	0.10	0.10	0.10		
PHOSPHORUS	mg/L	1	0.06	0.06	0.06		
SULFATE	mg/L	8	117.00	28.00	50.84	29.81	81.84
TOTAL DISSOLVED SOLIDS	mg/L	8	536.00	296.00	398.00	89.41	490.99
TOTAL ORGANIC CARBON	mg/L	8	14.00	7.00	9.70	2.57	12.37
TOTAL SUSPENDED SOLIDS	mg/L	7	15.00	6.00	8.86	3.18	12.17

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW038

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	15	672.00	10.00	99.53	161.91	267.92
ANTIMONY	µg/L	8	36.60	11.00	19.15	9.08	28.59
ARSENIC	µg/L	4	4.00	2.00	2.75	0.96	3.75
BARIUM	µg/L	24	186.00	136.00	158.42	13.78	172.75
BERYLLIUM	µg/L	4	1.00	0.70	0.90	0.14	1.05
CADMIUM	µg/L	3	2.50	1.00	1.70	0.75	2.49
CALCIUM	µg/L	24	106,000.00	0.00	76,283.33	25,400.10	102,699.43
CESIUM	µg/L	2	60.00	50.00	55.00	7.07	62.35
CHROMIUM	µg/L	5	6.50	2.00	4.04	2.26	6.39
COBALT	µg/L	2	2.00	2.00	2.00	0.00	2.00
COPPER	µg/L	6	9.60	3.10	5.27	2.35	7.71
IRON	µg/L	19	514.00	7.00	111.70	120.94	237.48
LEAD	µg/L	7	6.50	0.70	2.84	2.08	5.00
LITHIUM	µg/L	13	11.00	2.60	5.46	2.54	8.10
MAGNESIUM	µg/L	24	24,400.00	0.00	15,875.00	5,440.13	21,532.73
MANGANESE	µg/L	22	32.00	1.70	13.54	8.18	22.05
MERCURY	µg/L	2	0.20	0.20	0.20	0.00	0.20
MOLYBDENUM	µg/L	3	3.50	3.00	3.17	0.29	3.47
NICKEL	µg/L	3	11.20	4.00	6.40	4.16	10.72
POTASSIUM	µg/L	13	2,630.00	0.00	1,089.08	745.36	1,864.25
SELENIUM	µg/L	3	20.00	2.00	8.67	9.87	18.93
SILICON	µg/L	20	9,400.00	5,860.00	7,495.50	1,039.55	8,576.63
SILVER	µg/L	1	2.00	2.00	2.00		
SODIUM	µg/L	24	20,100.00	0.00	11,511.25	4,765.61	16,467.48
STRONTIUM	µg/L	24	596.00	396.00	466.29	54.75	523.23
TIN	µg/L	4	29.40	13.00	19.15	7.21	26.64
VANADIUM	µg/L	6	4.10	2.00	3.02	0.88	3.93
ZINC	µg/L	14	68.50	2.90	13.54	17.15	31.38

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/L	1	12.00	12.00	12.00		
ACETONE	µg/L	4	210.00	2.00	56.50	102.37	162.97
METHYLENE CHLORIDE	µg/L	4	20.00	2.00	7.75	8.26	16.34
THALLIUM	µg/L	3	3.00	1.00	2.03	1.00	3.08

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.11	0.00	0.03	0.05	0.07
CESIUM-137	pCi/L	6	0.79	-0.39	0.09	0.42	0.52
GROSS ALPHA	pCi/L	10	8.50	0.47	3.32	2.28	5.69
GROSS BETA	pCi/L	8	5.30	1.00	2.53	1.29	3.88

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW038

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
NEPTUNIUM-237	pCi/L	3	0.24	-0.32	-0.03	0.28	0.27
PLUTONIUM-236	pCi/L	1	0.02	0.02	0.02		
PLUTONIUM-238	pCi/L	1	0.03	0.03	0.03		
PLUTONIUM-239/240	pCi/L	5	0.01	0.00	0.00	0.01	0.01
RADIUM-226	pCi/L	2	0.63	0.16	0.40	0.33	0.74
STRONTIUM-89	pCi/L	1	-0.04	-0.04	-0.04		
STRONTIUM-89,90	pCi/L	3	0.54	0.19	0.42	0.20	0.63
STRONTIUM-90	pCi/L	1	0.10	0.10	0.10		
TRITIUM	pCi/L	8	700.00	16.47	248.02	229.93	487.15
URANIUM-233,-234	pCi/L	9	3.98	1.50	2.15	0.75	2.93
URANIUM-234	pCi/L	3	4.50	0.55	2.27	2.02	4.38
URANIUM-235	pCi/L	7	0.30	-0.02	0.12	0.11	0.24
URANIUM-238	pCi/L	12	3.00	0.60	1.37	0.73	2.13

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	15	260.00	165.00	223.47	22.67	247.05
CARBONATE AS CaCO3	mg/L	2	1.00	0.00	0.50	0.71	1.24
CHLORIDE	mg/L	15	50.20	36.50	41.95	4.74	46.87
DISSOLVED ORGANIC CARBO	mg/L	10	39.00	1.00	10.12	15.29	26.02
FLUORIDE	mg/L	15	0.68	0.48	0.57	0.05	0.62
NITRATE/NITRITE	mg/L	15	2.70	0.15	1.24	0.81	2.08
OIL AND GREASE	mg/L	3	6.20	0.50	2.77	3.02	5.91
PHOSPHORUS	mg/L	5	0.10	0.01	0.04	0.04	0.09
SILICA	mg/L	3	9.10	6.20	7.20	1.65	8.91
SULFATE	mg/L	15	150.00	20.70	34.15	32.33	67.78
SULFIDE	mg/L	1	1.00	1.00	1.00		
TOTAL DISSOLVED SOLIDS	mg/L	15	640.00	310.00	382.80	80.93	466.96
TOTAL ORGANIC CARBON	mg/L	11	6.00	2.00	3.51	1.25	4.81
TOTAL SUSPENDED SOLIDS	mg/L	11	22.00	5.00	10.55	5.01	15.75

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW043

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	3	818.00	245.00	475.00	302.75	789.86
BARIUM	µg/L	4	147.00	124.00	135.25	11.00	146.69
CALCIUM	µg/L	4	59,900.00	52,500.00	56,325.00	3,247.95	59,702.87
COPPER	µg/L	2	15.50	6.10	10.80	6.65	17.71
IRON	µg/L	4	996.00	42.00	419.75	416.98	853.40
LEAD	µg/L	3	3.00	1.30	2.30	0.89	3.22
LITHIUM	µg/L	3	6.60	6.30	6.50	0.17	6.68
MAGNESIUM	µg/L	4	9,080.00	8,250.00	8,665.00	415.73	9,097.36
MANGANESE	µg/L	4	124.00	6.80	72.25	55.44	129.91
MOLYBDENUM	µg/L	1	6.20	6.20	6.20		
POTASSIUM	µg/L	2	1,340.00	991.00	1,165.50	246.78	1,422.15
SILICON	µg/L	4	8,970.00	7,570.00	8,085.00	646.04	8,756.88
SODIUM	µg/L	4	19,300.00	17,400.00	18,400.00	941.63	19,379.29
STRONTIUM	µg/L	4	239.00	232.00	236.75	3.20	240.08
ZINC	µg/L	4	42.60	5.50	18.23	16.67	35.56

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.61	0.00	0.31	0.43	0.75
CESIUM-137	pCi/L	2	0.13	0.07	0.10	0.04	0.14
GROSS ALPHA	pCi/L	2	5.50	2.70	4.10	1.98	6.16
GROSS BETA	pCi/L	2	7.80	3.40	5.60	3.11	8.84
NEPTUNIUM-237	pCi/L	2	-0.01	-0.14	-0.08	0.09	0.02
PLUTONIUM-239/240	pCi/L	1	0.00	0.00	0.00		
STRONTIUM-89	pCi/L	1	-0.16	-0.16	-0.16		
STRONTIUM-90	pCi/L	1	0.25	0.25	0.25		
TRITIUM	pCi/L	1	170.00	170.00	170.00		
URANIUM-234	pCi/L	1	0.02	0.02	0.02		
URANIUM-235	pCi/L	1	0.02	0.02	0.02		
URANIUM-238	pCi/L	2	0.42	0.05	0.24	0.26	0.51

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	2	159.00	121.00	140.00	26.87	167.94
CHLORIDE	mg/L	2	25.20	24.70	24.95	0.35	25.32
DISSOLVED ORGANIC CARBO	mg/L	4	29.50	3.80	16.65	14.50	31.73
FLUORIDE	mg/L	2	0.36	0.28	0.32	0.06	0.38
NITRATE/NITRITE	mg/L	2	6.80	2.10	4.45	3.32	7.91
PHOSPHORUS	mg/L	1	0.07	0.07	0.07		
SULFATE	mg/L	2	47.80	43.20	45.50	3.25	48.88
TOTAL DISSOLVED SOLIDS	mg/L	2	290.00	258.00	274.00	22.63	297.53
TOTAL ORGANIC CARBON	mg/L	4	3.90	3.10	3.50	0.41	3.92

Summary Statistics for Surface-Water Data (Detects Only)
1991 - 1993

LOCATION: SW043

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TOTAL SUSPENDED SOLIDS	mg/L	2	28.00	11.00	19.50	12.02	32.00

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW044

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	6	1,200.00	36.00	521.83	454.55	994.57
BARIUM	µg/L	8	140.00	64.40	108.98	28.77	138.90
BERYLLIUM	µg/L	2	0.60	0.60	0.60	0.00	0.60
CADMIUM	µg/L	1	1.30	1.30	1.30		
CALCIUM	µg/L	8	79,000.00	30,900.00	63,112.50	19,759.80	83,662.70
CESIUM	µg/L	2	60.00	50.00	55.00	7.07	62.35
COBALT	µg/L	1	2.10	2.10	2.10		
COPPER	µg/L	5	12.00	3.40	7.42	3.39	10.94
IRON	µg/L	7	1,300.00	22.00	535.43	467.08	1,021.19
LEAD	µg/L	7	9.20	1.10	3.39	2.81	6.30
LITHIUM	µg/L	7	7.40	5.10	6.27	0.99	7.30
MAGNESIUM	µg/L	8	14,700.00	5,710.00	11,792.50	3,609.88	15,546.77
MANGANESE	µg/L	8	80.00	25.30	52.53	19.54	72.85
MOLYBDENUM	µg/L	3	9.40	3.60	5.57	3.32	9.02
POTASSIUM	µg/L	8	4,890.00	1,900.00	2,607.50	1,037.59	3,686.59
SILICON	µg/L	9	5,650.00	1,620.00	3,605.56	1,690.78	5,363.97
SODIUM	µg/L	8	35,000.00	17,800.00	29,412.50	6,812.48	36,497.47
STRONTIUM	µg/L	8	440.00	164.00	347.63	109.19	461.18
VANADIUM	µg/L	4	6.30	2.00	3.60	1.87	5.55
ZINC	µg/L	7	47.50	7.30	30.24	14.23	45.05

CHEMICAL GROUP: ORGANICS

BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	2.00	2.00	2.00		
TRICHLOROETHENE	µg/L	1	7.00	7.00	7.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	3	0.05	0.00	0.02	0.03	0.04
CESIUM-137	pCi/L	4	0.23	-0.17	0.07	0.17	0.25
GROSS ALPHA	pCi/L	4	6.20	1.42	3.18	2.10	5.36
GROSS BETA	pCi/L	4	6.50	3.50	4.51	1.37	5.93
NEPTUNIUM-237	pCi/L	2	0.21	-0.01	0.10	0.16	0.26
PLUTONIUM-239/240	pCi/L	3	0.00	0.00	0.00	0.00	0.00
STRONTIUM-89	pCi/L	1	-0.14	-0.14	-0.14		
STRONTIUM-89,90	pCi/L	2	0.59	0.52	0.55	0.05	0.60
STRONTIUM-90	pCi/L	1	0.29	0.29	0.29		
TRITIUM	pCi/L	3	123.60	58.00	92.69	32.96	126.98
URANIUM-233,-234	pCi/L	2	1.82	1.39	1.60	0.30	1.92
URANIUM-234	pCi/L	2	1.90	0.76	1.33	0.81	2.17
URANIUM-235	pCi/L	3	0.08	0.03	0.07	0.03	0.10
URANIUM-238	pCi/L	4	2.30	0.76	1.72	0.67	2.42

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW044

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	4	199.00	96.60	171.90	50.25	224.16
CHLORIDE	mg/L	4	67.70	32.90	57.68	16.65	74.99
DISSOLVED ORGANIC CARBO	mg/L	2	15.20	15.10	15.15	0.07	15.22
FLUORIDE	mg/L	4	0.62	0.40	0.51	0.09	0.60
NITRATE/NITRITE	mg/L	4	2.30	0.23	1.19	1.01	2.25
NITRITE	mg/L	1	0.10	0.10	0.10		
PHOSPHORUS	mg/L	2	0.11	0.05	0.08	0.04	0.12
SULFATE	mg/L	4	41.80	19.60	29.25	9.25	38.87
TOTAL DISSOLVED SOLIDS	mg/L	4	578.00	294.00	394.00	125.94	524.98
TOTAL ORGANIC CARBON	mg/L	2	14.70	14.60	14.65	0.07	14.72
TOTAL SUSPENDED SOLIDS	mg/L	4	39.00	6.00	20.50	15.33	36.44

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW046

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	13	595.00	27.00	167.22	194.66	369.67
ANTIMONY	µg/L	4	20.50	11.20	16.55	3.93	20.64
BARIUM	µg/L	18	160.00	99.00	137.27	21.19	159.31
CADMIUM	µg/L	3	2.00	1.70	1.87	0.15	2.03
CALCIUM	µg/L	18	94,100.00	65,900.00	84,216.67	9,901.23	94,513.95
CESIUM	µg/L	8	80.00	14.50	48.98	23.06	72.95
CHROMIUM	µg/L	4	11.40	2.70	7.65	4.10	11.91
COPPER	µg/L	5	12.50	5.50	9.18	2.84	12.13
IRON	µg/L	14	604.00	10.10	125.99	169.83	302.61
LEAD	µg/L	10	8.50	1.20	3.14	2.14	5.36
LITHIUM	µg/L	20	19.00	10.90	15.39	2.20	17.68
MAGNESIUM	µg/L	18	24,000.00	18,000.00	21,094.44	1,524.11	22,679.52
MANGANESE	µg/L	18	25.00	2.10	8.79	7.04	16.11
MERCURY	µg/L	1	0.21	0.21	0.21		
MOLYBDENUM	µg/L	5	14.50	3.10	6.86	4.97	12.02
POTASSIUM	µg/L	18	4,100.00	2,230.00	2,945.56	455.03	3,418.78
SELENIUM	µg/L	11	5.50	2.20	3.27	0.97	4.28
SILICON	µg/L	22	7,980.00	2,480.00	5,035.00	1,562.45	6,659.95
SILVER	µg/L	1	6.30	6.30	6.30		
SODIUM	µg/L	18	54,000.00	36,500.00	46,038.89	4,479.65	50,697.72
STRONTIUM	µg/L	20	700.00	480.00	609.45	62.01	673.94
TIN	µg/L	2	35.70	32.80	34.25	2.05	36.38
VANADIUM	µg/L	5	8.30	2.50	5.14	2.59	7.83
ZINC	µg/L	14	162.00	5.30	40.03	40.17	81.80

CHEMICAL GROUP: ORGANICS

ALDRIN	µg/L	1	0.01	0.01	0.01		
alpha-CHLORDANE	µg/L	1	2.60	2.60	2.60		
beta-BHC	µg/L	1	0.01	0.01	0.01		
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	2.00	2.00	2.00		
CYANIDE	µg/L	1	6.50	6.50	6.50		
METHYLENE CHLORIDE	µg/L	1	29.00	29.00	29.00		
TETRACHLOROETHENE	µg/L	2	6.00	4.00	5.00	1.41	6.47
TOLUENE	µg/L	1	4.00	4.00	4.00		
TRICHLOROETHENE	µg/L	1	7.00	7.00	7.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	6	0.24	0.00	0.04	0.10	0.14
CESIUM-137	pCi/L	8	0.90	-0.33	0.15	0.48	0.65
GROSS ALPHA	pCi/L	9	8.00	3.50	5.48	1.65	7.20

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW046

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
GROSS BETA	pCi/L	10	7.90	2.03	5.91	1.93	7.91
NEPTUNIUM-237	pCi/L	2	-0.05	-0.35	-0.20	0.21	0.02
PLUTONIUM-239/240	pCi/L	5	0.01	0.00	0.00	0.00	0.01
RADIUM-226	pCi/L	3	0.99	0.33	0.56	0.37	0.95
STRONTIUM-89,90	pCi/L	6	1.09	0.10	0.59	0.37	0.98
STRONTIUM-90	pCi/L	1	0.39	0.39	0.39		
TRITIUM	pCi/L	7	328.00	81.25	172.67	86.74	262.88
URANIUM-233,-234	pCi/L	7	5.24	3.71	4.34	0.53	4.89
URANIUM-234	pCi/L	3	3.30	3.00	3.13	0.15	3.29
URANIUM-235	pCi/L	7	0.36	0.00	0.12	0.13	0.25
URANIUM-238	pCi/L	10	3.85	2.40	3.00	0.47	3.48

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	10	265.00	136.00	197.80	39.42	238.79
CARBONATE AS CaCO3	mg/L	1	0.00	0.00	0.00		
CHLORIDE	mg/L	9	122.00	73.00	104.54	15.11	120.26
DISSOLVED ORGANIC CARBO	mg/L	9	6.80	3.80	4.96	1.22	6.23
FLUORIDE	mg/L	9	1.10	0.88	0.95	0.07	1.03
NITRATE/NITRITE	mg/L	10	11.00	6.50	8.02	1.44	9.51
NITRITE	mg/L	8	0.54	0.04	0.19	0.22	0.42
OIL AND GREASE	mg/L	2	7.30	0.20	3.75	5.02	8.97
PHOSPHORUS	mg/L	5	0.19	0.04	0.09	0.06	0.15
SILICA	mg/L	1	4.30	4.30	4.30		
SULFATE	mg/L	9	67.80	35.50	47.48	12.03	59.99
TOTAL DISSOLVED SOLIDS	mg/L	9	758.00	420.00	504.22	100.91	609.17
TOTAL ORGANIC CARBON	mg/L	9	6.30	3.50	4.71	1.11	5.86
TOTAL SUSPENDED SOLIDS	mg/L	10	35.00	5.00	12.20	9.82	22.41

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW050

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	1	300.00	300.00	300.00		
ARSENIC	µg/L	1	1.10	1.10	1.10		
BARIUM	µg/L	2	202.00	186.00	194.00	11.31	205.77
CALCIUM	µg/L	2	115,000.00	111,000.00	113,000.00	2,828.43	115,941.56
IRON	µg/L	2	363.00	23.20	193.10	240.27	442.99
LEAD	µg/L	1	1.40	1.40	1.40		
LITHIUM	µg/L	2	66.40	47.10	56.75	13.65	70.94
MAGNESIUM	µg/L	2	9,660.00	9,240.00	9,450.00	296.98	9,758.86
MANGANESE	µg/L	2	7.60	1.40	4.50	4.38	9.06
POTASSIUM	µg/L	1	2,860.00	2,860.00	2,860.00		
SILICON	µg/L	2	5,780.00	5,130.00	5,455.00	459.62	5,933.00
SODIUM	µg/L	2	8,680.00	8,600.00	8,640.00	56.57	8,698.83
STRONTIUM	µg/L	2	370.00	357.00	363.50	9.19	373.06
ZINC	µg/L	2	5.80	5.10	5.45	0.49	5.96

CHEMICAL GROUP: ORGANICS

CARBON TETRACHLORIDE	µg/L	1	21.00	21.00	21.00		
CHLOROFORM	µg/L	1	4.00	4.00	4.00		
NITRATE/NITRITE	µg/L	1	1,500.00	1,500.00	1,500.00		
PHOSPHORUS	µg/L	1	107.00	107.00	107.00		
TETRACHLOROETHENE	µg/L	1	9.00	9.00	9.00		
TRICHLOROETHENE	µg/L	1	4.00	4.00	4.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.32	0.32	0.32		
GROSS ALPHA	pCi/L	1	0.00	0.00	0.00		
GROSS BETA	pCi/L	1	24.13	24.13	24.13		
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.02	0.02	0.02		
PLUTONIUM-239/240	pCi/L	1	1.47	1.47	1.47		
STRONTIUM-89,90	pCi/L	1	0.00	0.00	0.00		
TRITIUM	pCi/L	1	122.50	122.50	122.50		
URANIUM-233,-234	pCi/L	1	1.16	1.16	1.16		
URANIUM-235	pCi/L	1	0.15	0.15	0.15		
URANIUM-238	pCi/L	1	1.85	1.85	1.85		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	1	241.00	241.00	241.00		
CARBONATE AS CaCO3	mg/L	1	0.00	0.00	0.00		
CHLORIDE	mg/L	1	35.10	35.10	35.10		

Summary Statistics for Surface-Water Data (Detects Only)
1991 - 1993

LOCATION: SW050

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
DISSOLVED ORGANIC CARBO	mg/L	1	8.00	8.00	8.00		
FLUORIDE	mg/L	1	0.30	0.30	0.30		
OIL AND GREASE	mg/L	1	9.35	9.35	9.35		
ORTHOPHOSPHATE	mg/L	1	0.04	0.04	0.04		
SULFATE	mg/L	1	24.80	24.80	24.80		
TOTAL DISSOLVED SOLIDS	mg/L	1	411.00	411.00	411.00		
TOTAL ORGANIC CARBON	mg/L	1	10.00	10.00	10.00		
TOTAL SUSPENDED SOLIDS	mg/L	1	13.00	13.00	13.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW051

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	1	60.10	60.10	60.10		
BARIUM	µg/L	2	153.00	140.00	146.50	9.19	156.06
CALCIUM	µg/L	2	81,300.00	78,100.00	79,700.00	2,262.74	82,053.25
COPPER	µg/L	1	2.80	2.80	2.80		
IRON	µg/L	2	62.90	18.80	40.85	31.18	73.28
LITHIUM	µg/L	2	4.10	3.00	3.55	0.78	4.36
MAGNESIUM	µg/L	2	6,770.00	6,460.00	6,615.00	219.20	6,842.97
MOLYBDENUM	µg/L	1	4.90	4.90	4.90		
POTASSIUM	µg/L	2	1,880.00	1,780.00	1,830.00	70.71	1,903.54
SILICON	µg/L	2	4,990.00	4,770.00	4,880.00	155.56	5,041.79
SODIUM	µg/L	2	6,250.00	6,070.00	6,160.00	127.28	6,292.37
STRONTIUM	µg/L	2	296.00	282.00	289.00	9.90	299.30
ZINC	µg/L	1	2.80	2.80	2.80		

CHEMICAL GROUP: ORGANICS

1,2-DICHLOROETHENE	µg/L	1	5.00	5.00	5.00		
CARBON TETRACHLORIDE	µg/L	1	76.00	76.00	76.00		
TETRACHLOROETHENE	µg/L	1	11.00	11.00	11.00		
TRICHLOROETHENE	µg/L	1	8.00	8.00	8.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.06	0.06	0.06		
GROSS ALPHA	pCi/L	1	5.76	5.76	5.76		
GROSS BETA	pCi/L	1	20.81	20.81	20.81		
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.01	0.01	0.01		
PLUTONIUM-239/240	pCi/L	1	1.03	1.03	1.03		
STRONTIUM-89,90	pCi/L	1	0.00	0.00	0.00		
TRITIUM	pCi/L	1	0.00	0.00	0.00		
URANIUM-233.-234	pCi/L	1	0.00	0.00	0.00		
URANIUM-235	pCi/L	1	0.38	0.38	0.38		
URANIUM-238	pCi/L	1	0.57	0.57	0.57		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	1	191.00	191.00	191.00		
CHLORIDE	mg/L	1	27.20	27.20	27.20		
DISSOLVED ORGANIC CARBO	mg/L	1	5.00	5.00	5.00		
FLUORIDE	mg/L	1	0.35	0.35	0.35		
NITRATE/NITRITE	mg/L	1	1.80	1.80	1.80		
SULFATE	mg/L	1	18.80	18.80	18.80		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW051

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TOTAL DISSOLVED SOLIDS	mg/L	1	298.00	298.00	298.00		
TOTAL ORGANIC CARBON	mg/L	1	8.00	8.00	8.00		
TOTAL SUSPENDED SOLIDS	mg/L	1	5.50	5.50	5.50		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW052

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	1	947.00	947.00	947.00		
BARIUM	µg/L	2	138.00	121.00	129.50	12.02	142.00
CALCIUM	µg/L	2	124,000.00	121,000.00	122,500.00	2,121.32	124,706.17
COPPER	µg/L	1	4.40	4.40	4.40		
IRON	µg/L	1	912.00	912.00	912.00		
LEAD	µg/L	1	2.50	2.50	2.50		
LITHIUM	µg/L	2	45.60	37.40	41.50	5.80	47.53
MAGNESIUM	µg/L	2	17,000.00	16,300.00	16,650.00	494.97	17,164.77
MANGANESE	µg/L	2	37.00	14.90	25.95	15.63	42.20
POTASSIUM	µg/L	2	1,920.00	1,480.00	1,700.00	311.13	2,023.57
SILICON	µg/L	2	7,760.00	5,250.00	6,505.00	1,774.84	8,350.83
SODIUM	µg/L	2	35,300.00	34,200.00	34,750.00	777.82	35,558.93
STRONTIUM	µg/L	2	561.00	536.00	548.50	17.68	566.88
ZINC	µg/L	2	5.50	4.20	4.85	0.92	5.81

CHEMICAL GROUP: ORGANICS

CARBON TETRACHLORIDE	µg/L	1	16.00	16.00	16.00		
CHLOROFORM	µg/L	1	3.00	3.00	3.00		
TETRACHLOROETHENE	µg/L	1	18.00	18.00	18.00		
TRICHLOROETHENE	µg/L	1	4.00	4.00	4.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.16	0.16	0.16		
GROSS ALPHA	pCi/L	1	0.00	0.00	0.00		
GROSS BETA	pCi/L	1	24.87	24.87	24.87		
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.01	0.01	0.01		
PLUTONIUM-239/240	pCi/L	1	0.92	0.92	0.92		
STRONTIUM-89,90	pCi/L	1	0.00	0.00	0.00		
TRITIUM	pCi/L	1	0.00	0.00	0.00		
URANIUM-233,-234	pCi/L	1	0.30	0.30	0.30		
URANIUM-235	pCi/L	1	0.16	0.16	0.16		
URANIUM-238	pCi/L	1	0.57	0.57	0.57		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	1	183.00	183.00	183.00		
CHLORIDE	mg/L	1	59.40	59.40	59.40		
DISSOLVED ORGANIC CARBO	mg/L	1	5.00	5.00	5.00		
FLUORIDE	mg/L	1	0.31	0.31	0.31		
NITRATE/NITRITE	mg/L	1	1.10	1.10	1.10		

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW052

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
PHOSPHORUS	mg/L	1	0.07	0.07	0.07		
SULFATE	mg/L	1	39.10	39.10	39.10		
TOTAL DISSOLVED SOLIDS	mg/L	1	544.00	544.00	544.00		
TOTAL ORGANIC CARBON	mg/L	1	8.00	8.00	8.00		
TOTAL SUSPENDED SOLIDS	mg/L	1	12.50	12.50	12.50		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW053

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	6	1,730.00	48.10	838.50	724.26	1,591.73
ANTIMONY	µg/L	1	28.20	28.20	28.20		
ARSENIC	µg/L	8	8.40	1.00	3.99	2.88	6.98
BARIUM	µg/L	9	336.00	33.20	185.24	84.74	273.37
CALCIUM	µg/L	9	155,000.00	15,000.00	94,544.44	37,771.45	133,826.76
CHROMIUM	µg/L	1	8.70	8.70	8.70		
COPPER	µg/L	3	2.70	2.50	2.63	0.12	2.75
IRON	µg/L	9	12,100.00	1,050.00	5,127.78	4,129.30	9,422.25
LEAD	µg/L	6	7.90	1.50	4.65	2.70	7.46
LITHIUM	µg/L	8	22.20	11.90	17.04	3.87	21.07
MAGNESIUM	µg/L	9	32,900.00	2,480.00	22,475.56	8,334.83	31,143.78
MANGANESE	µg/L	9	526.00	29.20	340.13	164.53	511.24
MERCURY	µg/L	1	0.26	0.26	0.26		
MOLYBDENUM	µg/L	1	7.80	7.80	7.80		
POTASSIUM	µg/L	8	4,760.00	1,090.00	1,831.25	1,223.33	3,103.51
SILICON	µg/L	8	10,300.00	5,180.00	7,525.25	1,847.84	9,448.00
SODIUM	µg/L	9	18,300.00	10,200.00	15,255.56	2,317.39	17,665.64
STRONTIUM	µg/L	9	972.00	82.70	604.19	242.80	856.70
VANADIUM	µg/L	3	5.80	4.30	5.20	0.79	6.03
ZINC	µg/L	5	47.40	7.60	18.40	17.09	36.17

CHEMICAL GROUP: ORGANICS

1,2-DICHLOROETHENE	µg/L	4	38.00	15.00	27.75	11.53	39.74
AROCOR-1254	µg/L	1	2.70	2.70	2.70		
CARBON TETRACHLORIDE	µg/L	1	4.00	4.00	4.00		
CHLOROFORM	µg/L	1	3.00	3.00	3.00		
METHYLENE CHLORIDE	µg/L	1	3.00	3.00	3.00		
TRICHLOROETHENE	µg/L	1	8.00	8.00	8.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	4	3.48	0.01	1.04	1.64	2.74
CESIUM-137	pCi/L	3	0.45	0.33	0.38	0.06	0.45
GROSS ALPHA	pCi/L	5	23.00	5.70	10.11	7.24	17.64
GROSS BETA	pCi/L	4	8.30	3.10	6.10	2.17	8.36
NEPTUNIUM-237	pCi/L	2	-0.07	-0.53	-0.30	0.33	0.04
PLUTONIUM-239/240	pCi/L	4	42.25	1.60	13.19	19.43	33.39
RADIUM-226	pCi/L	2	0.52	0.52	0.52	0.00	0.52
STRONTIUM-89	pCi/L	2	0.38	-0.08	0.15	0.33	0.49
STRONTIUM-89,90	pCi/L	1	1.55	1.55	1.55		
STRONTIUM-90	pCi/L	2	0.26	0.18	0.22	0.06	0.28

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW053

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TRITIUM	pCi/L	3	120.00	38.78	76.59	40.90	119.13
URANIUM-233,-234	pCi/L	1	3.62	3.62	3.62		
URANIUM-234	pCi/L	3	0.94	0.59	0.79	0.18	0.97
URANIUM-235	pCi/L	3	0.14	0.02	0.06	0.07	0.13
URANIUM-238	pCi/L	4	2.50	0.37	1.06	0.99	2.09

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	4	393.00	243.00	308.50	65.73	376.86
CHLORIDE	mg/L	4	56.40	52.90	54.18	1.54	55.78
DISSOLVED ORGANIC CARBO	mg/L	3	7.00	6.00	6.37	0.55	6.94
FLUORIDE	mg/L	4	1.10	0.79	0.91	0.13	1.05
NITRATE/NITRITE	mg/L	1	0.20	0.20	0.20		
PHOSPHORUS	mg/L	4	0.22	0.06	0.13	0.07	0.20
SULFATE	mg/L	4	140.00	8.50	44.75	63.66	110.96
TOTAL DISSOLVED SOLIDS	mg/L	4	1,020.00	422.00	652.50	287.96	951.98
TOTAL ORGANIC CARBON	mg/L	4	8.50	6.20	7.35	1.22	8.62
TOTAL SUSPENDED SOLIDS	mg/L	4	181.00	44.00	84.50	64.82	151.91

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW054

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	11	983.00	37.10	355.05	309.95	677.40
ANTIMONY	µg/L	4	19.60	8.90	15.38	4.58	20.13
ARSENIC	µg/L	1	0.80	0.80	0.80		
BARIUM	µg/L	18	130.00	60.10	97.72	22.61	121.23
BERYLLIUM	µg/L	2	0.60	0.40	0.50	0.14	0.65
CADMIUM	µg/L	1	1.90	1.90	1.90		
CALCIUM	µg/L	18	68,000.00	35,800.00	51,561.11	9,877.02	61,833.21
CESIUM	µg/L	3	60.00	50.00	53.33	5.77	59.34
COPPER	µg/L	8	6.50	2.70	4.09	1.43	5.58
IRON	µg/L	17	1,210.00	20.70	375.02	368.09	757.83
LEAD	µg/L	14	5.60	0.80	2.61	1.56	4.23
LITHIUM	µg/L	16	13.30	4.80	8.27	2.56	10.93
MAGNESIUM	µg/L	18	16,600.00	7,360.00	11,345.00	3,132.02	14,602.30
MANGANESE	µg/L	18	296.00	8.60	74.14	91.51	169.31
MERCURY	µg/L	1	0.29	0.29	0.29		
MOLYBDENUM	µg/L	2	6.00	4.40	5.20	1.13	6.38
NICKEL	µg/L	2	7.20	6.10	6.65	0.78	7.46
POTASSIUM	µg/L	18	4,270.00	2,080.00	3,149.44	638.59	3,813.58
SELENIUM	µg/L	3	2.00	1.20	1.50	0.44	1.95
SILICON	µg/L	22	6,070.00	408.00	2,754.77	1,423.62	4,235.34
SODIUM	µg/L	18	44,900.00	14,400.00	30,494.44	11,345.66	42,293.93
STRONTIUM	µg/L	20	460.00	217.00	315.45	84.94	403.79
VANADIUM	µg/L	4	8.10	3.20	4.73	2.27	7.09
ZINC	µg/L	13	34.30	2.60	13.62	8.26	22.20

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	2	11.00	11.00	11.00	0.00	11.00
beta-BHC	µg/L	1	0.06	0.06	0.06		
delta-BHC	µg/L	1	0.02	0.02	0.02		
METHYLENE CHLORIDE	µg/L	2	12.00	12.00	12.00	0.00	12.00

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	6	0.08	0.00	0.02	0.03	0.06
CESIUM-137	pCi/L	5	0.56	-0.15	0.18	0.26	0.44
GROSS ALPHA	pCi/L	8	7.60	0.23	3.57	2.87	6.56
GROSS BETA	pCi/L	9	13.00	3.25	6.40	3.15	9.68
NEPTUNIUM-237	pCi/L	2	0.37	-0.24	0.07	0.43	0.51
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	7	0.04	0.01	0.02	0.01	0.03
RADIUM-226	pCi/L	2	0.16	0.15	0.15	0.01	0.16

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW054

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
STRONTIUM-89	pCi/L	1	-0.09	-0.09	-0.09		
STRONTIUM-89,90	pCi/L	6	6.55	0.26	1.46	2.50	4.05
STRONTIUM-90	pCi/L	1	0.16	0.16	0.16		
TRITIUM	pCi/L	6	400.00	-79.20	150.94	186.36	344.75
URANIUM-233,-234	pCi/L	7	8.17	0.20	2.34	2.71	5.16
URANIUM-234	pCi/L	3	3.10	1.80	2.60	0.70	3.33
URANIUM-235	pCi/L	9	0.33	-0.02	0.14	0.12	0.27
URANIUM-238	pCi/L	10	13.72	0.60	3.42	3.84	7.41

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	10	202.00	110.00	146.00	30.61	177.84
CARBONATE AS CaCO3	mg/L	1	25.50	25.50	25.50		
CHLORIDE	mg/L	10	81.70	22.30	48.32	20.09	69.22
DISSOLVED ORGANIC CARBO	mg/L	8	13.50	4.00	8.57	3.34	12.04
FLUORIDE	mg/L	10	0.71	0.42	0.56	0.11	0.68
NITRATE/NITRITE	mg/L	3	2.20	0.23	1.54	1.14	2.73
NITRITE	mg/L	2	0.05	0.03	0.04	0.01	0.05
OIL AND GREASE	mg/L	3	18.40	6.20	11.10	6.44	17.80
ORTHOPHOSPHATE	mg/L	2	0.20	0.07	0.14	0.10	0.24
PHOSPHORUS	mg/L	7	0.21	0.05	0.09	0.06	0.15
SULFATE	mg/L	10	65.10	16.10	32.77	17.19	50.64
TOTAL DISSOLVED SOLIDS	mg/L	10	536.00	190.00	298.40	99.86	402.25
TOTAL ORGANIC CARBON	mg/L	8	16.30	4.00	9.86	4.46	14.49
TOTAL SUSPENDED SOLIDS	mg/L	12	61.00	5.00	20.17	17.24	38.09

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW055

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	4	2,300.00	134.00	874.25	983.22	1,896.80
BARIUM	µg/L	8	328.00	177.00	250.75	54.69	307.62
BERYLLIUM	µg/L	1	0.60	0.60	0.60		
CALCIUM	µg/L	8	166,000.00	93,700.00	116,912.50	23,538.38	141,392.42
CESIUM	µg/L	2	60.00	60.00	60.00	0.00	60.00
COPPER	µg/L	4	6.40	2.30	4.53	1.84	6.44
IRON	µg/L	7	5,750.00	12.90	1,238.60	2,117.17	3,440.46
LEAD	µg/L	5	5.80	1.80	3.44	1.80	5.31
LITHIUM	µg/L	7	129.00	8.90	52.90	38.20	92.63
MAGNESIUM	µg/L	8	33,600.00	13,100.00	19,375.00	6,854.98	26,504.18
MANGANESE	µg/L	8	796.00	2.30	170.56	293.47	475.77
MERCURY	µg/L	1	0.56	0.56	0.56		
MOLYBDENUM	µg/L	2	7.20	5.10	6.15	1.48	7.69
NICKEL	µg/L	1	5.70	5.70	5.70		
POTASSIUM	µg/L	8	17,800.00	1,760.00	6,840.00	6,646.43	13,752.28
SELENIUM	µg/L	2	4.20	2.90	3.55	0.92	4.51
SILICON	µg/L	8	11,700.00	4,170.00	6,696.25	2,492.27	9,288.21
SILVER	µg/L	1	2.70	2.70	2.70		
SODIUM	µg/L	8	721,000.00	18,100.00	202,900.00	308,237.87	523,467.38
STRONTIUM	µg/L	8	1,030.00	442.00	668.50	189.25	865.32
TIN	µg/L	1	10.40	10.40	10.40		
VANADIUM	µg/L	4	6.80	3.80	5.23	1.50	6.78
ZINC	µg/L	7	516.00	8.00	139.27	181.52	328.05

CHEMICAL GROUP: ORGANICS

1,1,1-TRICHLOROETHANE	µg/L	1	2.00	2.00	2.00		
1,2-DICHLOROETHENE	µg/L	2	6.00	6.00	6.00	0.00	6.00
ACETONE	µg/L	1	96.00	96.00	96.00		
AROCLOR-1254	µg/L	1	20.00	20.00	20.00		
CARBON TETRACHLORIDE	µg/L	1	5.00	5.00	5.00		
METHYLENE CHLORIDE	µg/L	2	3.00	3.00	3.00	0.00	3.00
THALLIUM	µg/L	1	1.70	1.70	1.70		
TRICHLOROETHENE	µg/L	5	33.00	12.00	26.80	8.41	35.54

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	4	0.76	0.11	0.34	0.30	0.65
CESIUM-137	pCi/L	3	0.11	-0.08	0.03	0.09	0.12
GROSS ALPHA	pCi/L	4	8.95	3.45	5.96	2.88	8.95
GROSS BETA	pCi/L	4	37.16	6.99	19.91	15.10	35.62
NEPTUNIUM-237	pCi/L	1	-0.51	-0.51	-0.51		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW055

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.02	0.02	0.02		
PLUTONIUM-239/240	pCi/L	4	4.54	0.40	1.72	1.92	3.71
RADIUM-226	pCi/L	1	0.27	0.27	0.27		
STRONTIUM-89	pCi/L	1	0.74	0.74	0.74		
STRONTIUM-89,90	pCi/L	3	1.22	0.00	0.60	0.61	1.23
STRONTIUM-90	pCi/L	1	0.58	0.58	0.58		
TRITIUM	pCi/L	4	42.30	-29.00	15.88	31.01	48.13
URANIUM-233,-234	pCi/L	3	2.71	1.16	1.99	0.78	2.80
URANIUM-234	pCi/L	1	1.20	1.20	1.20		
URANIUM-235	pCi/L	4	0.09	0.03	0.06	0.02	0.09
URANIUM-238	pCi/L	4	2.44	1.17	1.70	0.54	2.26

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	6	369.00	121.00	284.17	107.80	396.28
CHLORIDE	mg/L	6	1,170.00	52.30	294.05	430.67	741.94
DISSOLVED ORGANIC CARBO	mg/L	1	7.00	7.00	7.00		
FLUORIDE	mg/L	7	0.49	0.33	0.42	0.07	0.50
NITRATE/NITRITE	mg/L	6	1.40	0.64	1.12	0.37	1.50
NITRITE	mg/L	4	0.07	0.02	0.06	0.03	0.09
ORTHOPHOSPHATE	mg/L	5	0.10	0.03	0.07	0.03	0.10
PHOSPHORUS	mg/L	4	0.14	0.09	0.10	0.02	0.13
SULFATE	mg/L	6	64.50	27.00	46.45	19.82	67.06
TOTAL DISSOLVED SOLIDS	mg/L	6	2,910.00	420.00	1,006.67	945.57	1,990.06
TOTAL ORGANIC CARBON	mg/L	1	6.00	6.00	6.00		
TOTAL SUSPENDED SOLIDS	mg/L	6	57.00	5.50	22.75	21.06	44.65

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW056

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	7	513.00	17.80	119.74	183.38	310.46
ANTIMONY	µg/L	5	36.60	17.00	25.22	10.33	35.97
ARSENIC	µg/L	7	2.60	1.50	2.04	0.33	2.38
BARIUM	µg/L	14	241.00	207.00	224.43	11.84	236.74
BERYLLIUM	µg/L	3	1.20	1.00	1.07	0.12	1.19
CADMIUM	µg/L	3	3.00	1.50	2.50	0.87	3.40
CALCIUM	µg/L	12	134,000.00	110,000.00	122,583.33	8,522.25	131,446.48
CESIUM	µg/L	4	70.00	50.00	57.50	9.57	67.46
CHROMIUM	µg/L	4	16.00	3.00	8.82	6.82	15.91
COBALT	µg/L	4	4.30	2.40	3.68	0.86	4.57
COPPER	µg/L	6	17.00	4.00	8.97	5.81	15.01
IRON	µg/L	14	915.00	20.10	352.45	270.67	633.95
LEAD	µg/L	7	4.20	1.50	2.51	0.92	3.47
LITHIUM	µg/L	14	12.70	6.50	10.74	1.71	12.51
MAGNESIUM	µg/L	12	25,400.00	20,000.00	22,533.33	2,092.12	24,709.14
MANGANESE	µg/L	14	1,020.00	500.00	753.21	211.08	972.74
MERCURY	µg/L	2	0.20	0.20	0.20	0.00	0.20
MOLYBDENUM	µg/L	5	26.00	3.60	13.48	11.47	25.41
NICKEL	µg/L	3	14.20	5.00	8.07	5.31	13.59
POTASSIUM	µg/L	11	3,180.00	1,020.00	1,821.82	662.02	2,510.32
SELENIUM	µg/L	7	4.00	1.10	2.36	1.28	3.68
SILICON	µg/L	15	7,420.00	5,900.00	6,366.67	445.34	6,829.82
SILVER	µg/L	2	5.00	2.90	3.95	1.48	5.49
SODIUM	µg/L	12	69,600.00	52,400.00	60,958.33	5,080.17	66,241.71
STRONTIUM	µg/L	14	788.00	619.00	679.64	59.03	741.03
TIN	µg/L	3	21.20	16.00	17.73	3.00	20.86
VANADIUM	µg/L	4	7.70	3.00	5.05	2.42	7.56
ZINC	µg/L	8	35.30	5.50	14.04	9.83	24.26

CHEMICAL GROUP: ORGANICS

1,1,1-TRICHLOROETHANE	µg/L	8	5.00	3.00	3.88	0.83	4.74
1,1-DICHLOROETHANE	µg/L	8	6.00	2.00	3.63	1.30	4.98
1,1-DICHLOROETHENE	µg/L	1	1.00	1.00	1.00		
1,2-DICHLOROETHANE	µg/L	1	23.00	23.00	23.00		
1,2-DICHLOROETHENE	µg/L	13	370.00	210.00	295.38	42.15	339.22
CARBON TETRACHLORIDE	µg/L	5	3.00	2.00	2.60	0.55	3.17
METHYLENE CHLORIDE	µg/L	2	6.00	3.00	4.50	2.12	6.71
TETRACHLOROETHENE	µg/L	10	150.00	93.00	118.50	22.76	142.17
THALLIUM	µg/L	2	15.00	2.00	8.50	9.19	18.06
TRICHLOROETHENE	µg/L	10	110.00	73.00	89.30	12.70	102.51

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW056

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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VINYL CHLORIDE	µg/L	7	27.00	13.00	20.43	6.27	26.95
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CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	7	0.06	0.00	0.01	0.02	0.03
CESIUM-137	pCi/L	6	0.55	-0.19	0.21	0.27	0.49
GROSS ALPHA	pCi/L	6	7.80	2.63	5.75	2.02	7.85
GROSS BETA	pCi/L	8	12.29	5.17	7.47	2.21	9.76
NEPTUNIUM-237	pCi/L	2	0.10	-0.01	0.05	0.08	0.13
PLUTONIUM-239/240	pCi/L	7	0.01	0.00	0.00	0.00	0.01
RADIUM-226	pCi/L	3	0.82	0.32	0.61	0.26	0.87
STRONTIUM-89	pCi/L	1	0.34	0.34	0.34		
STRONTIUM-89,90	pCi/L	5	0.81	0.34	0.57	0.23	0.80
STRONTIUM-90	pCi/L	1	0.04	0.04	0.04		
TRITIUM	pCi/L	5	197.80	82.00	138.26	57.07	197.61
URANIUM-233,-234	pCi/L	7	4.74	3.80	4.37	0.32	4.71
URANIUM-234	pCi/L	2	4.30	4.10	4.20	0.14	4.35
URANIUM-235	pCi/L	6	0.32	0.05	0.19	0.09	0.28
URANIUM-238	pCi/L	9	4.65	2.70	3.70	0.67	4.40

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	8	431.00	281.00	378.75	52.67	433.52
CHLORIDE	mg/L	8	80.10	62.10	72.14	6.77	79.18
DISSOLVED ORGANIC CARBO	mg/L	5	12.10	3.00	6.92	4.48	11.58
FLUORIDE	mg/L	8	1.10	0.82	0.93	0.09	1.02
NITRATE/NITRITE	mg/L	8	5.30	2.90	4.03	0.83	4.89
OIL AND GREASE	mg/L	3	15.40	0.50	7.57	7.48	15.35
PHOSPHORUS	mg/L	1	0.01	0.01	0.01		
SILICA	mg/L	1	8.00	8.00	8.00		
SULFATE	mg/L	8	65.20	46.20	55.94	6.61	62.81
TOTAL DISSOLVED SOLIDS	mg/L	8	650.00	566.00	597.25	30.39	628.85
TOTAL ORGANIC CARBON	mg/L	5	4.80	3.00	3.78	0.78	4.59
TOTAL SUSPENDED SOLIDS	mg/L	1	5.00	5.00	5.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW057

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	1	1,020.00	1,020.00	1,020.00		
ARSENIC	µg/L	2	1.70	1.50	1.60	0.14	1.75
BARIUM	µg/L	2	165.00	147.00	156.00	12.73	169.24
CALCIUM	µg/L	2	116,000.00	115,000.00	115,500.00	707.11	116,235.39
CHROMIUM	µg/L	2	29.00	14.80	21.90	10.04	32.34
IRON	µg/L	1	670.00	670.00	670.00		
LEAD	µg/L	1	1.40	1.40	1.40		
MAGNESIUM	µg/L	2	19,500.00	18,800.00	19,150.00	494.97	19,664.77
MANGANESE	µg/L	2	61.80	32.60	47.20	20.65	68.67
SILICON	µg/L	2	7,270.00	4,980.00	6,125.00	1,619.27	7,809.05
SODIUM	µg/L	2	20,100.00	19,500.00	19,800.00	424.26	20,241.23
STRONTIUM	µg/L	2	668.00	640.00	654.00	19.80	674.59

CHEMICAL GROUP: ORGANICS

CARBON TETRACHLORIDE	µg/L	1	1.00	1.00	1.00		
CHLOROFORM	µg/L	1	4.00	4.00	4.00		
PHOSPHORUS	µg/L	1	60.70	60.70	60.70		
TETRACHLOROETHENE	µg/L	1	1.00	1.00	1.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.67	0.67	0.67		
GROSS ALPHA	pCi/L	1	2.23	2.23	2.23		
GROSS BETA	pCi/L	1	33.90	33.90	33.90		
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.09	0.09	0.09		
PLUTONIUM-239/240	pCi/L	1	5.70	5.70	5.70		
STRONTIUM-89,90	pCi/L	1	0.00	0.00	0.00		
TRITIUM	pCi/L	1	91.40	91.40	91.40		
URANIUM-233,-234	pCi/L	1	1.74	1.74	1.74		
URANIUM-235	pCi/L	1	0.11	0.11	0.11		
URANIUM-238	pCi/L	1	1.33	1.33	1.33		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	1	251.00	251.00	251.00		
CARBONATE AS CaCO3	mg/L	1	0.00	0.00	0.00		
CHLORIDE	mg/L	1	83.50	83.50	83.50		
DISSOLVED ORGANIC CARBO	mg/L	1	8.00	8.00	8.00		
FLUORIDE	mg/L	1	0.27	0.27	0.27		
OIL AND GREASE	mg/L	1	45.00	45.00	45.00		
SULFATE	mg/L	1	30.70	30.70	30.70		

Summary Statistics for Surface-Water Data (Detects Only)
1991 - 1993

LOCATION: SW057

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TOTAL DISSOLVED SOLIDS	mg/L	1	498.00	498.00	498.00		
TOTAL ORGANIC CARBON	mg/L	1	11.00	11.00	11.00		
TOTAL SUSPENDED SOLIDS	mg/L	1	15.00	15.00	15.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW058

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	2	980.00	48.40	514.20	658.74	1,199.29
BARIUM	µg/L	4	190.00	145.00	165.75	19.12	185.64
BERYLLIUM	µg/L	1	0.70	0.70	0.70		
CALCIUM	µg/L	4	100,000.00	78,100.00	89,725.00	11,915.64	102,117.27
CESIUM	µg/L	2	50.00	50.00	50.00	0.00	50.00
COBALT	µg/L	1	2.50	2.50	2.50		
COPPER	µg/L	2	13.00	3.40	8.20	6.79	15.26
IRON	µg/L	3	1,400.00	66.00	515.27	766.23	1,312.15
LEAD	µg/L	1	6.50	6.50	6.50		
LITHIUM	µg/L	4	6.00	4.00	5.03	0.84	5.90
MAGNESIUM	µg/L	4	9,600.00	7,780.00	8,752.50	886.24	9,674.19
MANGANESE	µg/L	4	160.00	1.60	50.78	74.87	128.64
MOLYBDENUM	µg/L	1	4.00	4.00	4.00		
POTASSIUM	µg/L	4	2,740.00	1,200.00	2,195.00	703.59	2,926.73
SILICON	µg/L	4	7,310.00	4,420.00	5,817.50	1,211.46	7,077.41
SODIUM	µg/L	4	8,400.00	7,700.00	7,997.50	294.43	8,303.71
STRONTIUM	µg/L	4	400.00	320.00	366.75	39.94	408.29
VANADIUM	µg/L	2	5.80	4.10	4.95	1.20	6.20
ZINC	µg/L	4	23.00	5.00	11.98	7.76	20.04

CHEMICAL GROUP: ORGANICS

CARBON TETRACHLORIDE	µg/L	1	14.00	14.00	14.00		
TETRACHLOROETHENE	µg/L	1	3.00	3.00	3.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	1.21	0.22	0.72	0.70	1.44
CESIUM-137	pCi/L	1	0.13	0.13	0.13		
GROSS ALPHA	pCi/L	2	3.29	0.20	1.74	2.18	4.01
GROSS BETA	pCi/L	2	22.25	1.31	11.78	14.81	27.18
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.03	0.03	0.03		
PLUTONIUM-239/240	pCi/L	2	11.03	0.99	6.01	7.10	13.39
STRONTIUM-89,90	pCi/L	2	0.40	0.00	0.20	0.28	0.50
TRITIUM	pCi/L	2	33.42	0.00	16.71	23.63	41.29
URANIUM-233,-234	pCi/L	1	1.82	1.82	1.82		
URANIUM-235	pCi/L	1	0.06	0.06	0.06		
URANIUM-238	pCi/L	1	1.36	1.36	1.36		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	2	259.00	189.00	224.00	49.50	275.48
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Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW058

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
CHLORIDE	mg/L	2	29.20	20.70	24.95	6.01	31.20
DISSOLVED ORGANIC CARBO	mg/L	1	7.00	7.00	7.00		
FLUORIDE	mg/L	2	0.44	0.38	0.41	0.04	0.45
NITRATE/NITRITE	mg/L	1	0.86	0.86	0.86		
SULFATE	mg/L	2	24.50	15.50	20.00	6.36	26.62
TOTAL DISSOLVED SOLIDS	mg/L	2	316.00	276.00	296.00	28.28	325.42
TOTAL ORGANIC CARBON	mg/L	1	13.00	13.00	13.00		
TOTAL SUSPENDED SOLIDS	mg/L	1	18.00	18.00	18.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW059

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	59	3,950.00	17.40	542.18	836.73	1,412.37
ANTIMONY	µg/L	11	46.80	10.00	25.47	11.52	37.45
ARSENIC	µg/L	8	4.30	1.00	1.79	1.23	3.07
BARIUM	µg/L	112	211.00	58.60	164.59	28.48	194.22
BERYLLIUM	µg/L	7	1.60	0.60	1.03	0.40	1.45
CADMIUM	µg/L	3	3.70	2.10	2.93	0.80	3.77
CALCIUM	µg/L	114	139,000.00	41,500.00	103,180.70	17,960.09	121,859.19
CESIUM	µg/L	6	80.00	14.60	43.82	24.20	68.99
CHROMIUM	µg/L	13	26.60	3.50	8.58	6.47	15.31
COBALT	µg/L	4	3.60	1.50	2.70	0.88	3.61
COPPER	µg/L	44	13.80	2.00	4.33	2.42	6.85
IRON	µg/L	67	3,770.00	8.60	397.97	671.60	1,096.43
LEAD	µg/L	44	13.70	0.90	3.16	2.73	6.00
LITHIUM	µg/L	86	22.00	4.80	14.79	3.70	18.63
MAGNESIUM	µg/L	114	37,300.00	11,200.00	27,284.21	5,610.81	33,119.45
MANGANESE	µg/L	85	111.00	1.00	14.21	16.61	31.49
MERCURY	µg/L	8	1.40	0.20	0.42	0.41	0.85
MOLYBDENUM	µg/L	12	12.30	1.70	5.39	3.66	9.20
NICKEL	µg/L	8	36.50	3.70	10.70	10.77	21.90
POTASSIUM	µg/L	96	2,960.00	720.00	1,293.81	419.42	1,730.01
SELENIUM	µg/L	19	3.40	1.00	1.50	0.68	2.21
SILICON	µg/L	88	13,600.00	3,800.00	6,245.34	1,536.92	7,843.74
SILVER	µg/L	5	6.40	2.90	4.12	1.56	5.74
SODIUM	µg/L	114	62,900.00	18,400.00	38,963.16	7,257.25	46,510.70
STRONTIUM	µg/L	90	928.00	310.00	697.56	128.14	830.82
TIN	µg/L	8	46.20	11.20	23.88	11.42	35.75
VANADIUM	µg/L	40	29.70	2.60	7.52	7.55	15.38
ZINC	µg/L	113	400.00	22.00	183.15	78.35	264.63

CHEMICAL GROUP: ORGANICS

1,1,1-TRICHLOROETHANE	µg/L	61	32.00	4.00	10.59	5.49	16.30
1,1-DICHLOROETHANE	µg/L	30	6.00	1.00	3.30	1.49	4.85
1,1-DICHLOROETHENE	µg/L	45	11.00	1.00	5.20	2.61	7.91
1,2-DICHLOROETHANE	µg/L	4	5.00	1.00	2.75	2.06	4.89
1,2-DICHLOROETHENE	µg/L	49	130.00	15.00	61.12	31.02	93.38
2-BUTANONE	µg/L	1	7.00	7.00	7.00		
2-HEXANONE	µg/L	1	3.00	3.00	3.00		
4,4'-DDT	µg/L	1	0.01	0.01	0.01		
ACETONE	µg/L	3	43.00	7.00	19.67	20.23	40.71
BENZENE	µg/L	1	3.00	3.00	3.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW059

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	1.00	1.00	1.00		
BROMODICHLOROMETHANE	µg/L	1	0.60	0.60	0.60		
CARBON TETRACHLORIDE	µg/L	63	250.00	16.00	116.29	50.63	168.94
CHLOROFORM	µg/L	63	34.00	4.00	19.56	7.80	27.66
cis-1,2-DICHLOROETHENE	µg/L	11	76.00	34.00	50.55	13.20	64.27
METHANE, ISOCYANO-	µg/L	1	8.10	8.10	8.10		
METHYLENE CHLORIDE	µg/L	9	7.00	1.00	2.89	1.76	4.72
TETRACHLOROETHENE	µg/L	63	180.00	20.00	61.86	34.51	97.75
THALLIUM	µg/L	1	1.00	1.00	1.00		
TOLUENE	µg/L	1	2.00	2.00	2.00		
TRICHLOROETHENE	µg/L	63	170.00	18.00	69.81	36.37	107.63
TRICHLOROFUOROMETHANE	µg/L	1	9.00	9.00	9.00		
VINYL CHLORIDE	µg/L	11	14.00	2.00	5.27	3.93	9.36

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	31	0.44	-0.06	0.05	0.10	0.15
CESIUM-134	pCi/L	1	1.04	1.04	1.04		
CESIUM-137	pCi/L	11	1.27	-0.46	0.34	0.45	0.81
GROSS ALPHA	pCi/L	48	21.91	-0.26	5.59	4.62	10.39
GROSS BETA	pCi/L	51	56.33	1.80	7.33	8.67	16.35
NEPTUNIUM-237	pCi/L	4	0.24	-0.02	0.08	0.13	0.22
PLUTONIUM-236	pCi/L	8	0.00	-0.02	0.00	0.01	0.01
PLUTONIUM-238	pCi/L	2	0.00	-0.01	-0.01	0.01	0.00
PLUTONIUM-239/240	pCi/L	33	0.56	0.00	0.05	0.10	0.15
RADIUM-226	pCi/L	6	0.81	0.15	0.37	0.24	0.62
STRONTIUM-89	pCi/L	1	0.05	0.05	0.05		
STRONTIUM-89,90	pCi/L	20	9.25	-0.06	2.35	3.08	5.55
STRONTIUM-90	pCi/L	1	0.16	0.16	0.16		
TOTAL RADIOCESIUM	pCi/L	3	1.30	0.53	1.01	0.42	1.45
TRITIUM	pCi/L	6	580.00	-17.60	175.01	221.16	405.02
URANIUM, TOTAL	pCi/L	7	6.10	3.52	5.19	0.99	6.22
URANIUM-233,-234	pCi/L	52	5.82	0.03	3.19	1.18	4.42
URANIUM-234	pCi/L	6	3.50	1.29	2.75	0.94	3.73
URANIUM-235	pCi/L	38	0.52	-0.01	0.16	0.11	0.27
URANIUM-238	pCi/L	58	5.73	0.01	2.75	1.07	3.86

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	56	432.00	87.10	326.36	74.07	403.39
CARBONATE AS CaCO3	mg/L	2	12.30	0.00	6.15	8.70	15.20
CHLORIDE	mg/L	56	130.00	20.00	59.42	18.73	78.90
DISSOLVED ORGANIC CARBO	mg/L	10	7.30	2.00	4.80	1.54	6.40
FLUORIDE	mg/L	56	1.60	0.50	1.04	0.18	1.23
NITRATE/NITRITE	mg/L	10	6.40	2.20	3.95	1.15	5.15

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW059

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
OIL AND GREASE	mg/L	3	12.10	0.30	4.53	6.57	11.36
ORTHOPHOSPHATE	mg/L	2	0.04	0.01	0.03	0.02	0.05
PHOSPHORUS	mg/L	4	0.14	0.04	0.09	0.04	0.14
SILICA	mg/L	2	5.80	4.70	5.25	0.78	6.06
SULFATE	mg/L	56	49.00	14.80	38.28	7.90	46.49
TOTAL DISSOLVED SOLIDS	mg/L	56	617.00	190.00	493.96	83.86	581.18
TOTAL ORGANIC CARBON	mg/L	54	16.00	2.00	4.07	2.39	6.56
TOTAL SUSPENDED SOLIDS	mg/L	35	130.00	4.00	36.10	34.54	72.02

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW060

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	11	4,930.00	19.10	527.03	1,461.26	2,046.73
ANTIMONY	µg/L	1	18.90	18.90	18.90		
BARIUM	µg/L	19	231.00	23.50	165.59	46.35	213.79
BERYLLIUM	µg/L	2	1.30	1.10	1.20	0.14	1.35
CADMIUM	µg/L	1	3.50	3.50	3.50		
CALCIUM	µg/L	19	123,000.00	11,300.00	88,642.11	27,575.78	117,320.92
CESIUM	µg/L	1	50.00	50.00	50.00		
CHROMIUM	µg/L	2	12.50	7.80	10.15	3.32	13.61
COBALT	µg/L	2	5.70	3.50	4.60	1.56	6.22
COPPER	µg/L	7	10.90	2.70	4.94	2.89	7.95
IRON	µg/L	15	4,520.00	8.70	381.88	1,147.37	1,575.15
LEAD	µg/L	12	40.60	0.90	8.01	12.34	20.84
LITHIUM	µg/L	18	11.90	2.10	7.53	2.00	9.61
MAGNESIUM	µg/L	19	17,400.00	1,950.00	14,211.05	4,340.12	18,724.78
MANGANESE	µg/L	18	68.40	2.80	16.93	23.18	41.04
MOLYBDENUM	µg/L	1	3.60	3.60	3.60		
POTASSIUM	µg/L	17	5,010.00	746.00	1,829.71	1,099.79	2,973.49
SELENIUM	µg/L	5	3.80	1.10	1.90	1.12	3.06
SILICON	µg/L	23	11,400.00	985.00	5,633.70	1,684.89	7,385.98
SILVER	µg/L	3	4.40	2.20	3.47	1.14	4.65
SODIUM	µg/L	19	42,700.00	26,700.00	34,121.05	4,811.63	39,125.14
STRONTIUM	µg/L	20	561.00	61.00	445.53	135.60	586.55
THALLIUM	µg/L	1	1.80	1.80	1.80		
VANADIUM	µg/L	3	14.00	2.40	6.80	6.29	13.34
ZINC	µg/L	14	547.00	3.50	284.71	169.23	460.71

CHEMICAL GROUP: ORGANICS

1,1,1-TRICHLOROETHANE	µg/L	5	8.00	4.00	5.20	1.64	6.91
AROCLOR-1254	µg/L	2	24.00	24.00	24.00	0.00	24.00
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	2	4.00	1.00	2.50	2.12	4.71
CARBON TETRACHLORIDE	µg/L	9	35.00	7.00	19.00	9.03	28.39
CHLOROFORM	µg/L	2	3.00	2.00	2.50	0.71	3.24
HEXADECANOIC ACID	µg/L	1	5.00	5.00	5.00		
METHYLENE CHLORIDE	µg/L	1	2.00	2.00	2.00		
TETRACHLOROETHENE	µg/L	8	20.00	3.00	12.13	5.72	18.07
TRICHLOROETHENE	µg/L	7	16.00	6.00	11.29	3.40	14.82
TRICHLOROFLUOROMETHANE	µg/L	1	6.00	6.00	6.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	7	0.63	0.00	0.19	0.24	0.44
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Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW060

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
CESIUM-137	pCi/L	5	0.25	-0.23	0.04	0.25	0.30
GROSS ALPHA	pCi/L	10	10.50	1.37	4.49	2.95	7.57
GROSS BETA	pCi/L	10	20.30	2.68	7.72	6.14	14.10
NEPTUNIUM-237	pCi/L	2	-0.22	-0.37	-0.30	0.11	-0.18
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	8	0.04	0.00	0.02	0.01	0.03
RADIUM-226	pCi/L	2	0.17	0.17	0.17	0.00	0.17
STRONTIUM-89	pCi/L	1	0.56	0.56	0.56		
STRONTIUM-89,90	pCi/L	6	7.49	0.21	1.69	2.86	4.66
STRONTIUM-90	pCi/L	1	0.05	0.05	0.05		
TRITIUM	pCi/L	7	1,200.00	60.39	313.20	421.22	751.27
URANIUM-233,-234	pCi/L	7	3.20	0.88	2.27	0.78	3.08
URANIUM-234	pCi/L	3	3.80	2.90	3.30	0.46	3.78
URANIUM-235	pCi/L	7	0.22	0.03	0.09	0.06	0.16
URANIUM-238	pCi/L	11	4.10	0.54	2.38	1.02	3.43

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	11	278.00	43.30	235.57	65.09	303.26
CARBONATE AS CaCO3	mg/L	4	14.90	10.60	12.90	1.78	14.75
CHLORIDE	mg/L	10	77.00	45.40	63.14	9.97	73.51
DISSOLVED ORGANIC CARBO	mg/L	11	15.50	2.00	5.86	4.83	10.89
FLUORIDE	mg/L	10	0.94	0.35	0.81	0.17	0.98
NITRATE/NITRITE	mg/L	11	5.10	1.20	4.46	1.12	5.63
NITRITE	mg/L	1	0.03	0.03	0.03		
OIL AND GREASE	mg/L	2	62.30	8.80	35.55	37.83	74.89
ORTHOPHOSPHATE	mg/L	3	0.06	0.06	0.06	0.00	0.06
PHOSPHORUS	mg/L	2	0.19	0.06	0.12	0.09	0.22
SULFATE	mg/L	10	44.60	14.80	33.65	7.52	41.47
TOTAL DISSOLVED SOLIDS	mg/L	10	568.00	204.00	434.40	99.25	537.62
TOTAL ORGANIC CARBON	mg/L	10	10.50	2.00	5.10	2.86	8.08
TOTAL SUSPENDED SOLIDS	mg/L	7	88.00	5.00	41.86	37.33	80.68

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW061

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	67	19,000.00	14.80	567.57	2,375.69	3,038.28
ANTIMONY	µg/L	13	37.40	20.10	28.98	6.56	35.81
ARSENIC	µg/L	11	3.50	1.00	1.85	1.02	2.91
BARIUM	µg/L	127	258.00	22.80	154.70	26.35	182.11
BERYLLIUM	µg/L	10	1.80	0.36	1.02	0.51	1.54
CADMIUM	µg/L	6	4.70	1.60	2.83	1.23	4.11
CALCIUM	µg/L	127	108,000.00	11,100.00	81,652.76	14,476.24	96,708.04
CESIUM	µg/L	6	110.00	50.00	63.33	23.38	87.65
CHROMIUM	µg/L	13	37.10	2.70	6.98	9.20	16.54
COBALT	µg/L	10	11.40	1.50	3.72	2.95	6.79
COPPER	µg/L	38	39.80	2.30	5.21	6.31	11.78
IRON	µg/L	97	24,500.00	6.80	563.61	2,503.55	3,167.31
LEAD	µg/L	47	92.50	0.80	5.61	13.47	19.62
LITHIUM	µg/L	92	21.60	2.40	8.75	3.00	11.87
MAGNESIUM	µg/L	127	28,800.00	1,950.00	15,321.02	2,735.17	18,165.60
MANGANESE	µg/L	127	496.00	2.80	66.75	65.03	134.37
MERCURY	µg/L	6	0.88	0.13	0.32	0.28	0.61
MOLYBDENUM	µg/L	12	11.50	1.70	3.67	2.70	6.48
NICKEL	µg/L	6	21.40	2.70	9.70	6.82	16.79
POTASSIUM	µg/L	116	13,600.00	837.00	2,081.16	1,852.17	4,007.42
SELENIUM	µg/L	35	7.40	1.00	1.81	1.14	3.00
SILICON	µg/L	107	38,600.00	1,110.00	5,554.39	3,408.29	9,099.02
SILVER	µg/L	5	8.30	2.00	4.84	2.48	7.42
SODIUM	µg/L	127	61,200.00	21,800.00	37,366.14	6,508.36	44,134.84
STRONTIUM	µg/L	104	747.00	58.30	462.07	85.02	550.49
TIN	µg/L	3	64.00	9.80	29.67	29.86	60.72
VANADIUM	µg/L	32	57.30	2.40	8.80	10.62	19.85
ZINC	µg/L	89	722.00	2.10	94.43	98.21	196.57

CHEMICAL GROUP: ORGANICS

1,1,1-TRICHLOROETHANE	µg/L	31	9.00	0.60	3.15	2.12	5.35
1,1-DICHLOROETHANE	µg/L	22	7.00	0.80	1.99	1.32	3.36
1,1-DICHLOROETHENE	µg/L	1	11.00	11.00	11.00		
1,2-DICHLOROETHANE	µg/L	1	1.00	1.00	1.00		
1,2-DICHLOROETHENE	µg/L	45	120.00	2.00	22.80	20.79	44.42
2-BUTANONE	µg/L	1	14.00	14.00	14.00		
2-HEXANONE	µg/L	1	12.00	12.00	12.00		
4-METHYL-2-PENTANONE	µg/L	1	11.00	11.00	11.00		
ACETONE	µg/L	5	55.00	2.00	22.40	25.15	48.55
BENZENE	µg/L	1	4.00	4.00	4.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW061

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
BENZOIC ACID	µg/L	1	4.00	4.00	4.00		
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	7.00	7.00	7.00		
CARBON TETRACHLORIDE	µg/L	46	18.00	1.00	6.37	3.99	10.52
CHLOROBENZENE	µg/L	1	4.00	4.00	4.00		
CHLOROFORM	µg/L	18	3.00	0.40	1.29	0.70	2.02
cis-1,2-DICHLOROETHENE	µg/L	9	36.00	5.00	19.22	11.26	30.93
METHYLENE CHLORIDE	µg/L	12	36.00	0.90	6.83	10.26	17.50
TETRACHLOROETHENE	µg/L	42	22.00	0.60	5.94	5.84	12.01
THALLIUM	µg/L	3	2.20	1.00	1.67	0.61	2.30
TOLUENE	µg/L	4	7.00	0.40	3.60	2.96	6.68
TOTAL XYLENES	µg/L	1	2.00	2.00	2.00		
TRICHLOROETHENE	µg/L	44	32.00	0.60	6.45	6.51	13.22
TRICHLOROFLUOROMETHANE	µg/L	1	7.00	7.00	7.00		
VINYL CHLORIDE	µg/L	20	37.00	1.00	7.00	7.95	15.27

CHEMICAL GROUP:

RADIONUCLIDES

AMERICIUM-241	pCi/L	43	1.33	0.00	0.06	0.21	0.28
CESIUM-137	pCi/L	12	1.20	-0.60	0.22	0.54	0.78
GROSS ALPHA	pCi/L	57	14.00	-0.54	4.78	3.04	7.95
GROSS BETA	pCi/L	64	34.00	2.04	7.55	7.29	15.14
NEPTUNIUM-237	pCi/L	3	0.14	-0.22	-0.03	0.18	0.15
PLUTONIUM-236	pCi/L	9	0.04	-0.11	-0.01	0.04	0.04
PLUTONIUM-238	pCi/L	4	0.03	-0.02	0.01	0.02	0.04
PLUTONIUM-239/240	pCi/L	44	0.63	0.00	0.05	0.12	0.18
RADIUM-226	pCi/L	7	0.70	0.17	0.30	0.19	0.49
STRONTIUM-89	pCi/L	1	0.29	0.29	0.29		
STRONTIUM-89,90	pCi/L	27	8.61	0.07	1.64	2.57	4.31
STRONTIUM-90	pCi/L	1	0.22	0.22	0.22		
TOTAL RADIOCESIUM	pCi/L	2	1.20	0.33	0.77	0.62	1.40
TRITIUM	pCi/L	7	390.00	-25.10	109.08	133.93	248.37
URANIUM, TOTAL	pCi/L	7	6.30	5.00	5.71	0.58	6.31
URANIUM-233,-234	pCi/L	62	6.17	0.02	2.38	1.12	3.55
URANIUM-234	pCi/L	3	4.00	0.87	2.46	1.57	4.08
URANIUM-235	pCi/L	40	0.54	-0.03	0.12	0.12	0.24
URANIUM-238	pCi/L	66	5.67	0.01	2.19	1.06	3.29

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	65	322.00	19.60	226.37	47.53	275.81
CARBONATE AS CaCO3	mg/L	10	25.50	4.00	11.70	7.38	19.38
CHLORIDE	mg/L	64	104.00	10.10	56.26	14.72	71.57
DISSOLVED ORGANIC CARBO	mg/L	12	12.30	3.00	5.33	3.18	8.64
FLUORIDE	mg/L	64	1.10	0.32	0.76	0.17	0.93
NITRATE/NITRITE	mg/L	12	5.20	1.50	3.70	1.13	4.88

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW061

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
NITRITE	mg/L	1	0.03	0.03	0.03		
OIL AND GREASE	mg/L	1	9.00	9.00	9.00		
ORTHOPHOSPHATE	mg/L	3	0.06	0.05	0.05	0.01	0.06
PHOSPHORUS	mg/L	1	0.74	0.74	0.74		
SULFATE	mg/L	64	89.10	10.80	37.60	10.34	48.35
TOTAL DISSOLVED SOLIDS	mg/L	64	520.00	226.00	401.28	54.91	458.38
TOTAL ORGANIC CARBON	mg/L	64	37.00	2.00	4.63	4.59	9.40
TOTAL SUSPENDED SOLIDS	mg/L	27	830.00	5.00	46.98	158.03	211.33

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW068

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	11	1,000.00	15.00	296.18	287.01	594.67
ANTIMONY	µg/L	3	37.50	22.60	30.43	7.48	38.21
BARIUM	µg/L	18	163.00	38.20	102.18	32.88	136.37
CADMIUM	µg/L	3	2.10	1.20	1.60	0.46	2.08
CALCIUM	µg/L	18	87,000.00	39,900.00	63,761.11	15,599.21	79,984.29
CESIUM	µg/L	4	60.00	50.00	55.00	5.77	61.00
COBALT	µg/L	1	3.10	3.10	3.10		
COPPER	µg/L	7	11.00	2.70	5.20	3.02	8.34
IRON	µg/L	14	1,000.00	11.10	304.60	294.35	610.72
LEAD	µg/L	13	8.50	1.00	3.28	2.16	5.53
LITHIUM	µg/L	16	14.00	5.70	9.44	2.24	11.77
MAGNESIUM	µg/L	18	18,700.00	7,620.00	13,533.33	3,396.51	17,065.70
MANGANESE	µg/L	16	159.00	8.70	39.27	37.73	78.51
MOLYBDENUM	µg/L	1	4.20	4.20	4.20		
NICKEL	µg/L	1	8.70	8.70	8.70		
POTASSIUM	µg/L	18	5,750.00	1,760.00	2,751.11	1,104.09	3,899.37
SELENIUM	µg/L	1	1.10	1.10	1.10		
SILICON	µg/L	22	7,120.00	1,410.00	4,548.18	1,653.72	6,268.05
SODIUM	µg/L	18	62,700.00	21,000.00	35,716.67	11,623.11	47,804.70
STRONTIUM	µg/L	18	500.00	253.00	380.94	88.73	473.22
VANADIUM	µg/L	7	4.10	2.40	3.14	0.58	3.75
ZINC	µg/L	9	58.00	9.80	24.83	17.64	43.18

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	9.00	9.00	9.00		
METHYLENE CHLORIDE	µg/L	1	7.00	7.00	7.00		
TETRACHLOROETHANE	µg/L	1	8.00	8.00	8.00		
THALLIUM	µg/L	1	6.20	6.20	6.20		
TOLUENE	µg/L	1	5.00	5.00	5.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.11	0.00	0.03	0.05	0.07
CESIUM-137	pCi/L	5	0.27	-0.14	0.04	0.15	0.20
GROSS ALPHA	pCi/L	7	7.00	0.93	4.42	2.15	6.65
GROSS BETA	pCi/L	9	9.80	-10.00	3.83	5.77	9.83
NEPTUNIUM-237	pCi/L	2	0.22	0.20	0.21	0.01	0.22
PLUTONIUM-239/240	pCi/L	7	0.01	0.00	0.00	0.00	0.01
RADIUM-226	pCi/L	3	0.69	0.19	0.35	0.29	0.66
STRONTIUM-89	pCi/L	1	0.27	0.27	0.27		
STRONTIUM-89,90	pCi/L	5	0.75	0.33	0.58	0.16	0.75

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW068

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
STRONTIUM-90	pCi/L	1	0.15	0.15	0.15		
TRITIUM	pCi/L	6	319.60	75.32	164.22	86.01	253.67
URANIUM-233,-234	pCi/L	6	3.02	0.86	2.24	0.76	3.03
URANIUM-234	pCi/L	3	2.80	1.80	2.27	0.50	2.79
URANIUM-235	pCi/L	7	0.15	0.05	0.11	0.04	0.15
URANIUM-238	pCi/L	9	3.00	1.10	2.27	0.68	2.97

CHEMICAL GROUP: WATER QUALITY PARAMETERS

AMMONIA	mg/L	1	0.54	0.54	0.54		
BICARBONATE AS CaCO3	mg/L	10	206.00	92.00	151.60	42.53	195.83
CARBONATE AS CaCO3	mg/L	3	30.20	12.30	18.33	10.28	29.02
CHLORIDE	mg/L	9	140.00	37.90	72.79	28.93	102.88
DISSOLVED ORGANIC CARBO	mg/L	7	7.40	3.00	5.46	1.79	7.32
FLUORIDE	mg/L	9	0.82	0.32	0.51	0.15	0.77
NITRATE/NITRITE	mg/L	10	10.00	0.47	2.75	2.70	5.56
NITRITE	mg/L	2	0.08	0.00	0.04	0.05	0.09
OIL AND GREASE	mg/L	1	8.60	8.60	8.60		
PHOSPHORUS	mg/L	3	0.09	0.05	0.07	0.02	0.09
SULFATE	mg/L	9	56.60	20.60	37.38	10.33	48.13
TOTAL DISSOLVED SOLIDS	mg/L	9	488.00	208.00	363.33	77.65	444.09
TOTAL ORGANIC CARBON	mg/L	9	22.00	3.60	7.56	5.57	13.34
TOTAL SUSPENDED SOLIDS	mg/L	11	146.00	14.00	43.55	51.14	96.73

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW069

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	12	1,020.00	28.00	405.83	367.19	787.72
ARSENIC	µg/L	1	0.70	0.70	0.70		
BARIUM	µg/L	16	450.00	34.30	129.22	96.18	229.24
CADMIUM	µg/L	3	1.80	1.20	1.57	0.32	1.90
CALCIUM	µg/L	16	75,000.00	48,000.00	60,625.00	9,273.44	70,269.38
CESIUM	µg/L	4	70.00	50.00	57.50	9.57	67.46
CHROMIUM	µg/L	2	4.30	2.00	3.15	1.63	4.84
COBALT	µg/L	1	2.40	2.40	2.40		
COPPER	µg/L	7	11.00	3.40	6.40	3.20	9.72
IRON	µg/L	14	1,120.00	8.80	401.08	382.66	799.05
LEAD	µg/L	10	4.10	1.30	2.34	0.92	3.30
LITHIUM	µg/L	16	13.70	5.70	9.16	1.85	11.08
MAGNESIUM	µg/L	16	18,700.00	9,400.00	13,950.00	2,678.81	16,735.96
MANGANESE	µg/L	16	160.00	6.70	46.36	41.32	89.34
POTASSIUM	µg/L	16	3,930.00	1,820.00	2,606.25	576.41	3,205.72
SELENIUM	µg/L	1	1.70	1.70	1.70		
SILICON	µg/L	20	7,440.00	1,540.00	4,690.50	1,552.49	6,305.09
SODIUM	µg/L	16	47,700.00	21,000.00	31,906.25	6,913.32	39,096.10
STRONTIUM	µg/L	16	487.00	280.00	380.13	66.57	449.35
VANADIUM	µg/L	5	3.90	2.50	3.26	0.65	3.94
ZINC	µg/L	11	28.80	6.50	14.64	7.11	22.03

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	10.00	10.00	10.00		
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	1.00	1.00	1.00		
METHYLENE CHLORIDE	µg/L	1	8.00	8.00	8.00		
TETRACHLOROETHANE	µg/L	1	50.00	50.00	50.00		
TOLUENE	µg/L	1	7.00	7.00	7.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	6	0.02	0.00	0.01	0.01	0.01
CESIUM-137	pCi/L	6	0.99	-0.23	0.16	0.45	0.62
GROSS ALPHA	pCi/L	8	12.00	1.64	4.92	3.16	8.21
GROSS BETA	pCi/L	8	9.50	2.57	6.12	2.78	9.01
NEPTUNIUM-237	pCi/L	2	0.23	0.19	0.21	0.03	0.24
PLUTONIUM-239/240	pCi/L	6	0.09	0.00	0.02	0.04	0.06
RADIUM-226	pCi/L	1	1.30	1.30	1.30		
STRONTIUM-89	pCi/L	1	0.33	0.33	0.33		
STRONTIUM-89,90	pCi/L	4	0.61	0.33	0.45	0.13	0.59
STRONTIUM-90	pCi/L	1	0.13	0.13	0.13		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW069

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TRITIUM	pCi/L	5	329.80	-94.80	166.52	159.03	331.91
URANIUM-233,-234	pCi/L	5	3.90	1.81	2.58	0.82	3.43
URANIUM-234	pCi/L	3	3.60	1.70	2.67	0.95	3.66
URANIUM-235	pCi/L	5	0.21	-0.02	0.07	0.08	0.16
URANIUM-238	pCi/L	8	3.30	1.66	2.58	0.61	3.21
CHEMICAL GROUP: WATER QUALITY PARAMETERS							
BICARBONATE AS CaCO ₃	mg/L	9	199.00	123.00	154.89	23.65	179.48
CARBONATE AS CaCO ₃	mg/L	1	12.50	12.50	12.50		
CHLORIDE	mg/L	8	89.10	40.60	62.53	15.40	78.54
DISSOLVED ORGANIC CARBO	mg/L	4	15.00	4.00	8.00	4.81	13.01
FLUORIDE	mg/L	8	0.86	0.46	0.66	0.12	0.78
NITRATE/NITRITE	mg/L	8	3.00	0.20	1.64	0.90	2.58
NITRITE	mg/L	4	0.06	0.02	0.03	0.02	0.05
OIL AND GREASE	mg/L	2	6.70	5.90	6.30	0.57	6.89
PHOSPHORUS	mg/L	5	0.84	0.06	0.29	0.32	0.62
SULFATE	mg/L	8	69.60	20.60	39.64	14.17	54.38
TOTAL DISSOLVED SOLIDS	mg/L	8	458.00	226.00	355.75	71.28	429.88
TOTAL ORGANIC CARBON	mg/L	6	19.00	4.90	7.80	5.54	13.56
TOTAL SUSPENDED SOLIDS	mg/L	12	212.00	7.50	71.29	77.04	151.41

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW070

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	17	1,790.00	23.00	462.86	486.69	969.02
ANTIMONY	µg/L	2	18.80	17.00	17.90	1.27	19.22
BARIUM	µg/L	21	160.00	30.00	93.79	37.18	132.46
BERYLLIUM	µg/L	3	1.50	0.50	0.83	0.58	1.43
CADMIUM	µg/L	5	1.90	1.20	1.50	0.33	1.84
CALCIUM	µg/L	22	80,800.00	26,500.00	51,650.00	15,580.75	67,853.98
CESIUM	µg/L	5	80.00	50.00	56.00	13.42	69.95
CHROMIUM	µg/L	3	63.00	2.00	22.97	34.68	59.04
COPPER	µg/L	14	12.00	2.20	5.14	2.56	7.80
IRON	µg/L	20	1,390.00	12.20	440.56	425.94	883.54
LEAD	µg/L	16	7.80	0.90	2.69	1.78	4.55
LITHIUM	µg/L	20	11.40	3.90	7.77	1.82	9.67
MAGNESIUM	µg/L	22	19,600.00	4,840.00	12,404.55	4,213.54	16,786.63
MANGANESE	µg/L	22	155.00	6.80	47.26	38.14	86.92
MERCURY	µg/L	1	0.20	0.20	0.20		
MOLYBDENUM	µg/L	2	6.10	4.50	5.30	1.13	6.48
NICKEL	µg/L	3	37.00	6.50	17.17	17.19	35.05
POTASSIUM	µg/L	22	4,060.00	2,100.00	2,810.00	516.46	3,347.12
SELENIUM	µg/L	1	0.90	0.90	0.90		
SILICON	µg/L	24	7,480.00	1,420.00	4,207.08	1,594.15	5,864.99
SILVER	µg/L	1	3.00	3.00	3.00		
SODIUM	µg/L	22	51,000.00	14,000.00	28,477.27	10,143.73	39,026.75
STRONTIUM	µg/L	22	520.00	145.00	325.82	108.86	439.03
VANADIUM	µg/L	6	4.70	2.30	3.17	0.90	4.10
ZINC	µg/L	18	109.00	3.60	18.64	23.68	43.28

CHEMICAL GROUP: ORGANICS

2-BUTANONE	µg/L	1	17.00	17.00	17.00		
ACETONE	µg/L	1	10.00	10.00	10.00		
CARBON DISULFIDE	µg/L	1	8.00	8.00	8.00		
Carbon Oxide Sulfide	µg/L	1	9.00	9.00	9.00		
METHYLENE CHLORIDE	µg/L	1	17.00	17.00	17.00		
TETRACHLOROETHANE	µg/L	1	20.00	20.00	20.00		
TOLUENE	µg/L	1	9.00	9.00	9.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	9	5.52	0.00	0.63	1.84	2.53
CESIUM-137	pCi/L	6	0.11	-0.31	-0.09	0.18	0.10
GROSS ALPHA	pCi/L	10	12.85	-0.05	4.12	3.86	8.14
GROSS BETA	pCi/L	11	8.30	2.32	5.06	1.99	7.13

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW070

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
NEPTUNIUM-237	pCi/L	2	0.24	0.19	0.22	0.04	0.25
PLUTONIUM-236	pCi/L	1	0.01	0.01	0.01		
PLUTONIUM-238	pCi/L	1	-0.01	-0.01	-0.01		
PLUTONIUM-239/240	pCi/L	7	0.02	0.00	0.01	0.01	0.01
RADIUM-226	pCi/L	1	0.21	0.21	0.21		
STRONTIUM-89	pCi/L	1	0.96	0.96	0.96		
STRONTIUM-89,90	pCi/L	8	5.98	0.27	1.15	1.96	3.18
STRONTIUM-90	pCi/L	1	0.08	0.08	0.08		
TRITIUM	pCi/L	8	320.00	-36.20	116.52	115.98	237.13
URANIUM-233,-234	pCi/L	8	3.67	0.24	1.65	1.09	2.78
URANIUM-234	pCi/L	3	3.00	1.50	2.37	0.78	3.17
URANIUM-235	pCi/L	8	5.69	0.06	0.81	1.97	2.86
URANIUM-238	pCi/L	12	7.93	0.05	2.37	1.96	4.41

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	13	206.00	79.20	133.27	43.96	178.99
CARBONATE AS CaCO3	mg/L	2	12.50	12.30	12.40	0.14	12.55
CHLORIDE	mg/L	11	83.00	27.00	50.05	17.51	68.26
DISSOLVED ORGANIC CARBO	mg/L	9	23.00	2.00	7.17	6.14	13.56
FLUORIDE	mg/L	12	0.82	0.35	0.56	0.16	0.72
NITRATE/NITRITE	mg/L	10	3.00	0.23	1.44	0.82	2.29
NITRITE	mg/L	5	0.16	0.03	0.07	0.06	0.13
OIL AND GREASE	mg/L	2	10.90	7.00	8.95	2.76	11.82
ORTHOPHOSPHATE —	mg/L	1	0.24	0.24	0.24		
PHOSPHORUS	mg/L	4	0.27	0.05	0.13	0.10	0.24
SULFATE	mg/L	12	82.40	13.20	35.32	22.02	58.21
TOTAL DISSOLVED SOLIDS	mg/L	12	462.00	190.00	302.25	91.67	397.58
TOTAL ORGANIC CARBON	mg/L	10	44.00	4.00	9.63	12.14	22.25
TOTAL SUSPENDED SOLIDS	mg/L	16	134.00	8.00	42.69	44.21	88.66

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW084

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	5	2,800.00	21.00	977.00	1,096.37	2,117.22
BARIUM	µg/L	8	130.00	68.00	106.63	18.59	125.95
CADMIUM	µg/L	2	1.60	1.50	1.55	0.07	1.62
CALCIUM	µg/L	8	84,000.00	69,700.00	76,287.50	4,955.35	81,441.07
CESIUM	µg/L	3	70.00	60.00	63.33	5.77	69.34
CHROMIUM	µg/L	2	4.20	3.80	4.00	0.28	4.29
COPPER	µg/L	3	16.00	4.80	9.10	6.04	15.38
IRON	µg/L	7	2,000.00	20.50	560.21	730.58	1,320.02
LEAD	µg/L	6	6.20	1.30	2.82	1.81	4.70
LITHIUM	µg/L	7	14.00	10.20	12.57	1.46	14.09
MAGNESIUM	µg/L	8	12,000.00	10,100.00	10,937.50	730.83	11,697.56
MANGANESE	µg/L	7	23.00	5.20	11.74	7.56	19.61
POTASSIUM	µg/L	8	6,000.00	4,460.00	5,030.00	531.22	5,582.47
SELENIUM	µg/L	7	14.00	2.60	6.29	4.55	11.02
SILICON	µg/L	15	8,780.00	5,510.00	6,599.33	1,167.94	7,813.99
SODIUM	µg/L	8	41,000.00	30,900.00	36,950.00	3,689.37	40,786.94
STRONTIUM	µg/L	9	380.00	293.00	329.22	31.55	362.03
TIN	µg/L	1	60.00	60.00	60.00		
VANADIUM	µg/L	4	7.60	2.10	4.88	2.34	7.31
ZINC	µg/L	8	155.00	9.50	65.95	50.01	117.96

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	14.00	14.00	14.00		
alpha-CHLORDANE	µg/L	1	0.00	0.00	0.00		
AROCOR-1254	µg/L	1	0.54	0.54	0.54		
CARBON TETRACHLORIDE	µg/L	1	13.00	13.00	13.00		
CHLOROFORM	µg/L	1	40.00	40.00	40.00		
gamma-CHLORDANE	µg/L	1	0.00	0.00	0.00		
HEPTACHLOR EPOXIDE	µg/L	1	0.05	0.05	0.05		
METHYLENE CHLORIDE	µg/L	1	15.00	15.00	15.00		
TETRACHLOROETHANE	µg/L	1	7.00	7.00	7.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.25	0.01	0.07	0.10	0.18
CESIUM-137	pCi/L	3	0.55	-0.16	0.22	0.36	0.60
GROSS ALPHA	pCi/L	5	8.90	2.95	5.52	2.43	8.05
GROSS BETA	pCi/L	5	11.00	5.02	7.60	2.93	10.65
PLUTONIUM-239/240	pCi/L	5	0.09	0.01	0.04	0.04	0.08
RADIUM-226	pCi/L	3	0.52	0.27	0.41	0.13	0.55
STRONTIUM-89,90	pCi/L	4	0.54	0.10	0.30	0.19	0.49

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW084

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TRITIUM	pCi/L	5	950.10	550.00	736.96	185.50	929.88
URANIUM-233,-234	pCi/L	5	2.64	2.00	2.30	0.27	2.57
URANIUM-235	pCi/L	4	0.13	0.00	0.08	0.06	0.14
URANIUM-238	pCi/L	5	1.72	1.20	1.46	0.24	1.71

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	5	166.00	133.00	151.40	12.54	164.44
CARBONATE AS CaCO3	mg/L	1	13.30	13.30	13.30		
CHLORIDE	mg/L	5	39.30	26.60	32.44	5.69	38.36
DISSOLVED ORGANIC CARBO	mg/L	2	3.00	2.00	2.50	0.71	3.24
FLUORIDE	mg/L	5	0.67	0.41	0.54	0.12	0.66
NITRATE/NITRITE	mg/L	7	42.90	14.20	24.04	13.07	37.63
NITRITE	mg/L	4	0.08	0.02	0.05	0.03	0.08
ORTHOPHOSPHATE	mg/L	4	0.08	0.05	0.07	0.02	0.09
PHOSPHORUS	mg/L	5	0.13	0.05	0.08	0.03	0.12
SULFATE	mg/L	5	87.50	74.00	80.46	5.79	86.48
TOTAL DISSOLVED SOLIDS	mg/L	5	452.00	366.00	409.20	38.59	449.33
TOTAL ORGANIC CARBON	mg/L	2	4.00	4.00	4.00	0.00	4.00
TOTAL SUSPENDED SOLIDS	mg/L	8	83.00	6.00	45.88	28.58	75.60

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW086

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	9	2,500.00	27.00	562.81	780.84	1,374.89
ARSENIC	µg/L	2	4.30	2.30	3.30	1.41	4.77
BARIUM	µg/L	12	130.00	76.70	104.88	18.99	124.64
CADMIUM	µg/L	3	2.60	1.20	1.90	0.70	2.63
CALCIUM	µg/L	12	87,000.00	59,700.00	74,316.67	9,493.81	84,190.23
CESIUM	µg/L	3	80.00	50.00	66.67	15.28	82.55
CHROMIUM	µg/L	3	6.10	2.20	3.63	2.15	5.86
COBALT	µg/L	2	3.30	3.10	3.20	0.14	3.35
COPPER	µg/L	7	15.00	5.40	8.27	3.30	11.70
IRON	µg/L	11	6,300.00	27.00	1,287.39	1,890.00	3,252.99
LEAD	µg/L	7	10.00	2.70	4.94	2.41	7.45
LITHIUM	µg/L	12	15.30	5.90	11.25	3.12	14.49
MAGNESIUM	µg/L	12	21,300.00	8,500.00	11,756.67	3,310.04	15,199.11
MANGANESE	µg/L	12	170.00	13.30	54.40	44.96	101.16
MERCURY	µg/L	1	1.10	1.10	1.10		
NICKEL	µg/L	2	18.90	4.60	11.75	10.11	22.27
POTASSIUM	µg/L	12	6,600.00	2,770.00	5,031.67	973.03	6,043.61
SELENIUM	µg/L	9	5.40	1.30	2.60	1.45	4.11
SILICON	µg/L	17	7,510.00	4,430.00	5,967.06	860.57	6,862.05
SODIUM	µg/L	12	47,000.00	32,100.00	40,458.33	4,791.37	45,441.35
STRONTIUM	µg/L	12	531.00	266.00	348.17	69.23	420.16
VANADIUM	µg/L	3	6.60	2.10	4.00	2.33	6.42
ZINC	µg/L	11	430.00	7.10	173.98	150.66	330.67

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	9.00	9.00	9.00		
AROCLOR-1254	µg/L	1	1.60	1.60	1.60		
CARBON TETRACHLORIDE	µg/L	1	3.00	3.00	3.00		
METHYLENE CHLORIDE	µg/L	6	30.00	4.00	11.83	11.07	23.35

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	7	0.48	0.01	0.11	0.17	0.28
CESIUM-137	pCi/L	4	0.26	0.03	0.15	0.10	0.25
GROSS ALPHA	pCi/L	7	14.00	2.89	6.19	4.31	10.67
GROSS BETA	pCi/L	7	99.35	3.87	20.75	34.88	57.03
NEPTUNIUM-237	pCi/L	1	-0.01	-0.01	-0.01		
PLUTONIUM-239/240	pCi/L	7	0.05	0.01	0.03	0.01	0.04
RADIUM-226	pCi/L	1	1.10	1.10	1.10		
STRONTIUM-89	pCi/L	1	0.18	0.18	0.18		
STRONTIUM-89,90	pCi/L	5	0.57	-0.06	0.24	0.23	0.48

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW086

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
STRONTIUM-90	pCi/L	1	0.12	0.12	0.12		
TRITIUM	pCi/L	7	4,451.00	770.00	1,422.09	1,343.44	2,819.26
URANIUM-233,-234	pCi/L	6	3.01	0.70	2.24	0.86	3.13
URANIUM-234	pCi/L	1	2.80	2.80	2.80		
URANIUM-235	pCi/L	6	0.15	0.02	0.08	0.05	0.14
URANIUM-238	pCi/L	7	3.06	0.51	1.97	0.82	2.83

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	8	190.00	98.10	162.89	29.22	193.28
CHLORIDE	mg/L	7	39.40	27.00	32.54	4.64	37.37
DISSOLVED ORGANIC CARBO	mg/L	3	4.70	2.00	3.57	1.40	5.02
FLUORIDE	mg/L	7	0.60	0.51	0.57	0.03	0.60
NITRATE/NITRITE	mg/L	9	42.20	11.00	18.99	8.97	28.32
NITRITE	mg/L	4	0.05	0.02	0.03	0.01	0.05
ORTHOPHOSPHATE	mg/L	6	0.10	0.06	0.07	0.01	0.08
PHOSPHORUS	mg/L	6	0.24	0.05	0.10	0.07	0.17
SULFATE	mg/L	7	83.60	69.90	76.83	5.56	82.61
TOTAL DISSOLVED SOLIDS	mg/L	7	492.00	350.00	427.14	51.12	480.31
TOTAL ORGANIC CARBON	mg/L	4	4.10	4.00	4.03	0.05	4.08
TOTAL SUSPENDED SOLIDS	mg/L	9	86.00	6.00	25.06	23.65	49.65

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW087

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	9	258.00	103.00	174.56	58.78	235.69
ANTIMONY	µg/L	8	188.00	101.00	133.50	30.44	165.16
ARSENIC	µg/L	3	2.00	1.50	1.77	0.25	2.03
BARIUM	µg/L	12	247.00	166.00	203.67	33.19	238.19
BERYLLIUM	µg/L	2	1.50	1.50	1.50	0.00	1.50
CADMIUM	µg/L	8	10.70	6.10	8.66	1.74	10.48
CALCIUM	µg/L	12	699,000.00	375,000.00	494,500.00	115,226.65	614,335.72
CHROMIUM	µg/L	9	46.60	5.90	36.28	13.13	49.93
COBALT	µg/L	5	20.40	7.20	13.50	5.70	19.42
COPPER	µg/L	4	69.90	10.80	33.00	26.94	61.01
IRON	µg/L	6	273.00	42.10	132.37	105.64	242.23
LEAD	µg/L	1	3.90	3.90	3.90		
LITHIUM	µg/L	12	1,690.00	1,050.00	1,270.83	202.33	1,481.25
MAGNESIUM	µg/L	12	239,000.00	128,000.00	158,666.67	36,079.04	206,188.87
MANGANESE	µg/L	12	74.50	31.10	47.74	15.23	63.58
MERCURY	µg/L	10	40,591.00	0.47	4,060.35	12,835.56	17,409.33
MOLYBDENUM	µg/L	4	21.40	19.70	20.45	0.70	21.18
NICKEL	µg/L	9	43.20	16.90	31.03	8.50	39.88
POTASSIUM	µg/L	12	455,000.00	291,000.00	341,416.67	51,873.02	395,364.61
SELENIUM	µg/L	10	6.70	1.90	4.28	2.03	6.39
SILICON	µg/L	3	5,250.00	1,500.00	3,890.00	2,076.37	6,049.42
SILVER	µg/L	5	9.50	2.40	5.40	2.61	8.11
SODIUM	µg/L	7	990,000.00	270,000.00	835,714.29	281,179.49	1,128,140.95
STRONTIUM	µg/L	12	6,580.00	3,970.00	5,007.50	909.51	5,953.39
THALLIUM	µg/L	2	1.00	1.00	1.00	0.00	1.00
TIN	µg/L	6	142.00	20.10	84.55	52.92	139.58
VANADIUM	µg/L	6	18.70	8.70	12.92	3.30	16.35
ZINC	µg/L	6	77.90	4.90	31.48	24.77	57.25

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	2.00	2.00	2.00		
CARBON DISULFIDE	µg/L	1	1.00	1.00	1.00		
CARBON TETRACHLORIDE	µg/L	1	1.00	1.00	1.00		
CYANIDE	µg/L	2	5.00	2.50	3.75	1.77	5.59
METHYLENE CHLORIDE	µg/L	1	9.00	9.00	9.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	7	0.34	0.00	0.05	0.13	0.19
CESIUM-137	pCi/L	5	0.53	-0.31	0.17	0.32	0.49
GROSS ALPHA	pCi/L	8	437.60	320.00	385.88	42.65	430.23

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW087

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
GROSS BETA	pCi/L	8	750.00	347.30	520.84	142.48	669.01
NEPTUNIUM-237	pCi/L	1	-0.15	-0.15	-0.15		
PLUTONIUM-239/240	pCi/L	7	0.03	0.00	0.02	0.01	0.02
RADIUM-226	pCi/L	5	1.70	1.10	1.35	0.25	1.61
STRONTIUM-89,90	pCi/L	5	2.70	0.40	1.37	1.13	2.54
TRITIUM	pCi/L	8	6,500.00	3,600.00	4,804.63	1,078.50	5,926.27
URANIUM-233,-234	pCi/L	6	330.40	250.00	286.58	32.52	320.41
URANIUM-234	pCi/L	2	420.00	380.00	400.00	28.28	429.42
URANIUM-235	pCi/L	8	17.00	7.25	11.25	3.23	14.60
URANIUM-238	pCi/L	8	260.00	150.00	198.65	39.28	239.50

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	8	320.00	240.00	293.00	26.79	320.86
CHLORIDE	mg/L	8	330.00	140.00	213.88	56.47	272.60
DISSOLVED ORGANIC CARBO	mg/L	5	8.00	5.00	6.60	1.52	8.18
FLUORIDE	mg/L	8	1.90	1.50	1.68	0.18	1.86
NITRATE/NITRITE	mg/L	8	8,820.00	1,000.00	2,127.50	2,714.57	4,950.66
NITRITE	mg/L	8	1.40	0.22	0.74	0.36	1.11
OIL AND GREASE	mg/L	4	0.80	0.20	0.58	0.26	0.85
ORTHOPHOSPHATE	mg/L	1	0.01	0.01	0.01		
PHOSPHORUS	mg/L	8	0.12	0.01	0.04	0.03	0.07
SILICA	mg/L	6	5.80	4.30	4.93	0.62	5.57
SULFATE	mg/L	8	350.00	140.00	255.38	75.67	334.07
TOTAL DISSOLVED SOLIDS	mg/L	8	13,000.00	7,700.00	9,606.25	1,578.98	11,248.39
TOTAL ORGANIC CARBON	mg/L	5	15.00	5.00	9.20	3.70	13.05
TOTAL SUSPENDED SOLIDS	mg/L	5	28.00	11.00	19.80	7.09	27.17

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW088

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	11	10,300.00	15.00	1,809.80	3,545.14	5,496.75
ANTIMONY	µg/L	9	101.00	55.50	74.97	14.62	90.17
ARSENIC	µg/L	4	2.00	1.00	1.53	0.55	2.10
BARIUM	µg/L	16	240.00	113.00	168.25	37.04	206.77
BERYLLIUM	µg/L	2	3.70	1.10	2.40	1.84	4.31
CADMIUM	µg/L	7	9.90	2.30	6.20	2.77	9.08
CALCIUM	µg/L	16	283,000.00	163,000.00	216,125.00	29,314.10	246,611.67
CESIUM	µg/L	1	70.00	70.00	70.00		
CHROMIUM	µg/L	11	39.40	5.80	23.95	9.47	33.80
COBALT	µg/L	6	10.00	3.50	5.95	2.59	8.64
COPPER	µg/L	7	28.20	5.50	15.76	8.05	24.13
IRON	µg/L	11	8,600.00	9.00	1,462.33	2,865.60	4,442.55
LEAD	µg/L	2	8.80	7.00	7.90	1.27	9.22
LITHIUM	µg/L	16	479.00	194.00	375.31	79.74	458.24
MAGNESIUM	µg/L	16	76,500.00	38,500.00	58,075.00	10,013.02	68,488.55
MANGANESE	µg/L	16	198.00	9.40	38.15	52.23	92.47
MERCURY	µg/L	10	1.60	0.21	0.50	0.41	0.93
MOLYBDENUM	µg/L	4	12.70	8.50	10.18	1.79	12.03
NICKEL	µg/L	8	23.80	9.80	17.06	4.82	22.07
POTASSIUM	µg/L	16	118,000.00	41,200.00	87,537.50	22,145.51	110,568.84
SELENIUM	µg/L	15	3.60	1.50	2.46	0.61	3.10
SILICON	µg/L	4	4,710.00	1,890.00	3,482.50	1,283.42	4,817.25
SILVER	µg/L	8	8.20	2.40	4.49	2.06	6.63
SODIUM	µg/L	16	576,000.00	278,000.00	460,562.50	80,487.65	544,269.66
STRONTIUM	µg/L	16	2,290.00	1,150.00	1,737.50	284.43	2,033.31
THALLIUM	µg/L	2	1.00	1.00	1.00	0.00	1.00
TIN	µg/L	10	66.10	12.60	39.60	18.46	58.80
VANADIUM	µg/L	10	37.70	4.10	14.76	10.42	25.59
ZINC	µg/L	13	129.00	16.30	68.55	37.00	107.03

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	3.00	3.00	3.00		
CARBON TETRACHLORIDE	µg/L	5	13.00	2.00	6.00	4.64	10.82
CHLOROFORM	µg/L	3	3.00	1.00	2.00	1.00	3.04
CYANIDE	µg/L	6	15.00	3.50	6.42	4.35	10.94
METHYLENE CHLORIDE	µg/L	2	5.00	5.00	5.00	0.00	5.00
TRICHLOROETHENE	µg/L	5	9.00	2.00	5.00	2.74	7.85

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	9	0.44	0.01	0.11	0.16	0.28
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Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW088

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
CESIUM-137	pCi/L	5	0.45	-0.46	0.02	0.33	0.36
GROSS ALPHA	pCi/L	9	200.00	30.00	99.75	51.55	153.35
GROSS BETA	pCi/L	9	370.00	68.13	184.13	89.73	277.45
NEPTUNIUM-237	pCi/L	2	0.09	-0.07	0.01	0.11	0.13
PLUTONIUM-239/240	pCi/L	8	0.59	0.01	0.14	0.21	0.36
RADIUM-226	pCi/L	5	1.80	0.35	0.81	0.58	1.41
STRONTIUM-89	pCi/L	1	0.35	0.35	0.35		
STRONTIUM-89,90	pCi/L	5	2.20	-0.06	0.77	0.85	1.65
STRONTIUM-90	pCi/L	1	0.17	0.17	0.17		
TOTAL RADIOCESIUM	pCi/L	1	1.00	1.00	1.00		
TRITIUM	pCi/L	9	2,355.00	1,100.00	1,725.75	452.56	2,196.41
URANIUM-233,-234	pCi/L	7	159.60	9.08	86.07	46.56	134.49
URANIUM-234	pCi/L	2	120.00	44.00	82.00	53.74	137.89
URANIUM-235	pCi/L	9	4.80	0.51	2.90	1.50	4.46
URANIUM-238	pCi/L	9	99.39	5.11	53.71	28.05	82.89

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	11	290.00	0.00	226.09	78.98	308.23
CARBONATE AS CaCO3	mg/L	1	1.00	1.00	1.00		
CHLORIDE	mg/L	10	140.00	33.00	97.69	26.56	125.32
DISSOLVED ORGANIC CARBO	mg/L	6	8.00	5.00	6.33	1.03	7.41
FLUORIDE	mg/L	10	1.30	0.84	1.10	0.15	1.26
NITRATE/NITRITE	mg/L	10	817.00	220.00	441.70	150.00	597.70
NITRITE	mg/L	10	0.40	0.05	0.17	0.10	0.27
OIL AND GREASE	mg/L	6	0.90	0.40	0.68	0.21	0.91
ORTHOPHOSPHATE	mg/L	10	0.06	0.01	0.04	0.02	0.06
PHOSPHORUS	mg/L	9	0.20	0.02	0.09	0.07	0.16
SILICA	mg/L	8	6.50	4.60	5.83	0.56	6.40
SULFATE	mg/L	10	220.00	100.00	155.60	39.92	197.12
TOTAL DISSOLVED SOLIDS	mg/L	10	5,300.00	2,000.00	3,535.00	923.78	4,495.73
TOTAL ORGANIC CARBON	mg/L	6	15.00	4.00	7.50	4.04	11.70
TOTAL SUSPENDED SOLIDS	mg/L	9	330.00	4.00	102.11	140.42	248.15

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW090

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	11	4,890.00	58.40	1,356.80	1,653.52	3,076.46
ANTIMONY	µg/L	2	67.50	22.60	45.05	31.75	78.07
ARSENIC	µg/L	8	3.30	2.00	2.60	0.60	3.23
BARIUM	µg/L	9	208.00	9.30	63.67	74.69	141.34
BERYLLIUM	µg/L	2	18.50	7.70	13.10	7.64	21.04
CADMIUM	µg/L	8	44.10	3.50	13.21	13.93	27.70
CALCIUM	µg/L	12	681,000.00	11,100.00	154,075.00	238,677.38	402,299.48
CESIUM	µg/L	1	50.00	50.00	50.00		
CHROMIUM	µg/L	3	19.40	7.00	12.53	6.31	19.09
COBALT	µg/L	4	32.20	3.90	17.63	12.79	30.93
COPPER	µg/L	12	205.00	22.00	122.71	54.26	179.14
IRON	µg/L	12	114,000.00	66.40	17,485.18	38,904.85	57,946.22
LEAD	µg/L	6	7.80	1.00	4.07	2.53	6.70
LITHIUM	µg/L	12	4,090.00	150.00	1,049.67	1,375.64	2,480.33
MAGNESIUM	µg/L	12	154,000.00	2,430.00	35,063.33	56,068.04	93,374.10
MANGANESE	µg/L	12	1,140.00	1.10	204.05	411.14	631.64
MERCURY	µg/L	2	0.25	0.23	0.24	0.01	0.25
MOLYBDENUM	µg/L	3	12.90	3.60	9.13	4.90	14.22
NICKEL	µg/L	8	80.70	3.10	32.30	28.65	62.09
POTASSIUM	µg/L	12	990,000.00	89,000.00	378,333.33	316,289.95	707,274.88
SELENIUM	µg/L	2	2.00	1.20	1.60	0.57	2.19
SILICON	µg/L	4	5,380.00	781.00	3,182.75	1,906.00	5,164.99
SILVER	µg/L	3	9.20	2.40	6.67	3.72	10.53
SODIUM	µg/L	12	980,000.00	132,000.00	381,166.67	243,485.24	634,391.31
STRONTIUM	µg/L	12	3,680.00	59.70	876.31	1,326.31	2,255.67
THALLIUM	µg/L	1	1.00	1.00	1.00		
TIN	µg/L	4	25.20	11.00	18.85	5.99	25.08
VANADIUM	µg/L	7	26.00	3.70	10.01	7.57	17.88
ZINC	µg/L	11	385.00	32.40	148.81	118.86	272.43

CHEMICAL GROUP: ORGANICS

CHLOROBENZENE	µg/L	1	2.00	2.00	2.00		
CYANIDE	µg/L	4	211.00	88.00	138.25	54.14	194.55
METHYLENE CHLORIDE	µg/L	1	3.00	3.00	3.00		
TOLUENE	µg/L	1	1.00	1.00	1.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	7	0.68	0.01	0.18	0.23	0.42
CESIUM-137	pCi/L	5	0.83	-0.14	0.36	0.39	0.77
GROSS ALPHA	pCi/L	7	880.00	58.22	287.30	281.15	579.70

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW090

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
GROSS BETA	pCi/L	7	2,200.00	79.08	853.24	859.61	1,747.24
NEPTUNIUM-237	pCi/L	2	0.10	-0.08	0.01	0.13	0.14
PLUTONIUM-239/240	pCi/L	7	0.19	0.02	0.09	0.07	0.16
RADIUM-226	pCi/L	3	1.34	0.10	0.53	0.70	1.26
STRONTIUM-89	pCi/L	1	0.03	0.03	0.03		
STRONTIUM-89,90	pCi/L	4	2.15	0.45	1.07	0.75	1.85
STRONTIUM-90	pCi/L	1	0.22	0.22	0.22		
TRITIUM	pCi/L	7	10,000.00	0.93	2,342.99	3,592.18	6,078.86
URANIUM-233,-234	pCi/L	5	583.00	44.55	217.23	219.93	445.96
URANIUM-234	pCi/L	2	780.00	190.00	485.00	417.19	918.88
URANIUM-235	pCi/L	7	22.00	1.01	8.89	7.90	17.11
URANIUM-238	pCi/L	7	330.00	17.38	124.79	119.62	249.20

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	7	430.00	110.00	257.86	118.18	380.76
CARBONATE AS CaCO3	mg/L	3	12.00	1.00	5.00	6.08	11.33
CHLORIDE	mg/L	7	510.00	31.00	174.29	177.17	358.54
CYANIDE	mg/L	2	0.06	0.06	0.06	0.00	0.06
DISSOLVED ORGANIC CARBO	mg/L	4	18.00	14.00	15.50	1.91	17.49
FLUORIDE	mg/L	7	1.10	0.50	0.78	0.23	1.02
NITRATE/NITRITE	mg/L	7	3,600.00	160.00	1,187.14	1,324.21	2,564.32
NITRITE	mg/L	6	2.00	0.29	1.05	0.66	1.73
OIL AND GREASE	mg/L	5	1.00	0.40	0.62	0.25	0.88
ORTHOPHOSPHATE	mg/L	8	0.14	0.03	0.09	0.04	0.13
PHOSPHORUS	mg/L	7	0.38	0.09	0.17	0.10	0.27
SILICA	mg/L	5	3.30	1.30	2.36	0.80	3.19
SULFATE	mg/L	7	480.00	21.00	183.29	159.58	349.24
TOTAL DISSOLVED SOLIDS	mg/L	7	24,000.00	1,200.00	8,272.86	8,754.63	17,377.67
TOTAL ORGANIC CARBON	mg/L	4	18.00	14.00	16.00	2.31	18.40
TOTAL SUSPENDED SOLIDS	mg/L	7	290.00	5.00	51.00	105.81	161.04

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW092

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	12	6,360.00	19.20	618.39	1,810.47	2,501.28
ANTIMONY	µg/L	3	18.30	15.30	17.07	1.57	18.70
BARIUM	µg/L	20	140.00	90.60	113.12	14.73	128.44
BERYLLIUM	µg/L	1	0.90	0.90	0.90		
CADMIUM	µg/L	1	1.50	1.50	1.50		
CALCIUM	µg/L	20	990,000.00	25,800.00	121,540.00	205,106.26	334,850.51
CESIUM	µg/L	5	130.00	50.00	72.00	34.93	108.33
CHROMIUM	µg/L	1	5.50	5.50	5.50		
COBALT	µg/L	1	5.50	5.50	5.50		
COPPER	µg/L	7	15.80	3.00	8.41	5.09	13.71
IRON	µg/L	17	6,970.00	15.90	527.23	1,663.96	2,257.75
LEAD	µg/L	13	13.00	1.20	3.35	3.39	6.88
LITHIUM	µg/L	20	30.00	10.00	15.90	5.19	21.29
MAGNESIUM	µg/L	20	24,000.00	6,500.00	18,645.00	4,682.05	23,514.33
MANGANESE	µg/L	20	208.00	9.30	64.18	60.81	127.42
MERCURY	µg/L	3	0.89	0.20	0.45	0.38	0.85
MOLYBDENUM	µg/L	2	15.90	3.40	9.65	8.84	18.84
NICKEL	µg/L	2	23.00	16.90	19.95	4.31	24.44
POTASSIUM	µg/L	20	4,750.00	1,290.00	3,296.50	679.47	4,003.15
SELENIUM	µg/L	12	6.90	1.30	2.97	1.62	4.65
SILICON	µg/L	25	13,900.00	4,040.00	5,360.80	1,923.16	7,360.88
SILVER	µg/L	2	3.50	3.50	3.50	0.00	3.50
SODIUM	µg/L	20	57,700.00	25,100.00	44,930.00	7,632.00	52,867.28
STRONTIUM	µg/L	20	640.00	156.00	480.05	120.02	604.87
TIN	µg/L	1	24.90	24.90	24.90		
VANADIUM	µg/L	4	15.50	2.00	5.63	6.60	12.48
ZINC	µg/L	12	73.10	5.10	18.58	19.47	38.83

CHEMICAL GROUP: ORGANICS

METHYLENE CHLORIDE	µg/L	1	14.00	14.00	14.00		
TRICHLOROETHENE	µg/L	2	2.00	1.00	1.50	0.71	2.24

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.01	0.00	0.00	0.00	0.01
CESIUM-137	pCi/L	5	0.28	-0.69	-0.03	0.38	0.37
GROSS ALPHA	pCi/L	9	8.50	0.69	4.75	2.98	7.85
GROSS BETA	pCi/L	9	11.00	3.72	7.07	2.47	9.65
NEPTUNIUM-237	pCi/L	1	0.05	0.05	0.05		
PLUTONIUM-239/240	pCi/L	6	0.01	0.00	0.01	0.00	0.01
RADIUM-226	pCi/L	3	0.23	0.01	0.12	0.11	0.23

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW092

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
STRONTIUM-89,90	pCi/L	6	0.74	0.45	0.57	0.13	0.70
STRONTIUM-90	pCi/L	1	0.52	0.52	0.52		
TRITIUM	pCi/L	5	400.00	-31.00	113.83	177.79	298.73
URANIUM-233,-234	pCi/L	7	4.57	2.51	3.29	0.72	4.04
URANIUM-234	pCi/L	2	4.40	2.60	3.50	1.27	4.82
URANIUM-235	pCi/L	7	0.33	0.03	0.14	0.10	0.24
URANIUM-238	pCi/L	9	5.80	3.40	4.57	0.85	5.45

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	10	324.00	168.00	251.70	51.15	304.90
CHLORIDE	mg/L	10	80.60	40.10	59.20	12.88	72.59
DISSOLVED ORGANIC CARBO	mg/L	8	9.10	3.00	4.76	1.94	6.78
FLUORIDE	mg/L	10	0.58	0.36	0.50	0.07	0.57
NITRATE/NITRITE	mg/L	10	8.70	3.80	5.74	1.75	7.56
ORTHOPHOSPHATE	mg/L	2	0.08	0.08	0.08	0.00	0.08
SULFATE	mg/L	10	58.90	31.40	45.41	8.56	54.32
TOTAL DISSOLVED SOLIDS	mg/L	10	566.00	334.00	454.80	85.50	543.72
TOTAL ORGANIC CARBON	mg/L	9	7.00	3.00	5.04	1.14	6.23
TOTAL SUSPENDED SOLIDS	mg/L	5	13.00	7.00	9.80	2.39	12.28

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW093

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
CHEMICAL GROUP: METALS							
ALUMINUM	µg/L	16	110,000.00	17.00	18,104.83	31,326.23	50,684.11
ANTIMONY	µg/L	2	39.30	16.00	27.65	16.48	44.78
ARSENIC	µg/L	2	5.70	3.00	4.35	1.91	6.34
BARIUM	µg/L	25	1,000.00	83.00	188.10	194.35	390.22
BERYLLIUM	µg/L	5	6.80	1.10	3.44	2.09	5.61
CADMIUM	µg/L	6	5.00	1.10	3.32	1.79	5.18
CALCIUM	µg/L	25	95,000.00	24,000.00	64,384.00	21,787.87	87,043.39
CESIUM	µg/L	8	60.00	50.00	53.75	5.18	59.13
CHROMIUM	µg/L	7	99.00	7.60	46.14	29.00	76.30
COBALT	µg/L	7	53.00	4.90	20.60	15.83	37.07
COPPER	µg/L	11	120.00	3.10	33.59	37.74	72.84
IRON	µg/L	24	110,000.00	7.20	11,979.42	26,065.69	39,087.74
LEAD	µg/L	17	89.00	1.30	27.75	33.95	63.06
LITHIUM	µg/L	25	70.00	3.70	15.16	13.35	29.05
MAGNESIUM	µg/L	25	31,000.00	6,900.00	15,696.00	5,256.23	21,162.48
MANGANESE	µg/L	25	2,100.00	76.70	511.86	384.89	912.14
MERCURY	µg/L	3	0.54	0.21	0.34	0.18	0.52
NICKEL	µg/L	7	100.00	6.10	36.30	33.09	70.71
POTASSIUM	µg/L	26	18,000.00	1,710.00	4,423.08	3,483.86	8,046.29
SELENIUM	µg/L	5	5.00	1.10	1.98	1.70	3.75
SILICON	µg/L	26	9,070.00	3.00	5,746.27	1,784.79	7,602.45
SILVER	µg/L	3	3.30	3.20	3.23	0.06	3.29
SODIUM	µg/L	25	46,000.00	9,100.00	30,972.00	11,371.69	42,798.56
STRONTIUM	µg/L	25	550.00	140.00	376.76	128.22	510.10
THALLIUM	µg/L	1	1.00	1.00	1.00		
TIN	µg/L	2	36.20	20.00	28.10	11.46	40.01
VANADIUM	µg/L	10	250.00	2.00	66.54	80.94	150.71
ZINC	µg/L	21	750.00	6.60	147.88	209.29	365.54
CHEMICAL GROUP: ORGANICS							
1,1-DICHLOROETHANE	µg/L	1	2.00	2.00	2.00		
ACETONE	µg/L	1	7.00	7.00	7.00		
METHYLENE CHLORIDE	µg/L	2	38.00	19.00	28.50	13.44	42.47
NAPHTHALENE	µg/L	1	1.00	1.00	1.00		
TETRACHLOROETHENE	µg/L	1	6.00	6.00	6.00		
CHEMICAL GROUP: RADIONUCLIDES							
AMERICIUM-241	pCi/L	7	0.01	0.00	0.00	0.00	0.01
CESIUM-137	pCi/L	8	1.60	-0.54	0.17	0.65	0.85
GROSS ALPHA	pCi/L	17	74.97	0.88	9.41	17.26	27.36

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW093

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
GROSS BETA	pCi/L	20	96.97	4.00	18.19	25.91	45.14
NEPTUNIUM-237	pCi/L	3	0.34	0.01	0.13	0.18	0.32
PLUTONIUM-239/240	pCi/L	5	0.01	0.00	0.00	0.00	0.01
RADIUM-226	pCi/L	3	0.36	0.14	0.22	0.13	0.35
STRONTIUM-89,90	pCi/L	6	1.36	0.58	0.86	0.30	1.17
TRITIUM	pCi/L	21	1,424.00	-81.30	131.90	315.64	460.17
URANIUM-233,-234	pCi/L	8	2.65	0.00	1.76	0.89	2.68
URANIUM-234	pCi/L	3	3.00	1.10	2.07	0.95	3.06
URANIUM-235	pCi/L	6	0.11	0.00	0.06	0.04	0.10
URANIUM-238	pCi/L	11	5.70	0.00	3.46	1.76	5.30

CHEMICAL GROUP: WATER QUALITY PARAMETERS

ALKALINITY AS CaCO3	mg/L	5	115.00	36.00	77.80	30.29	109.30
BICARBONATE AS CaCO3	mg/L	15	292.00	36.00	166.13	92.87	262.72
CHLORIDE	mg/L	15	71.00	12.00	38.77	18.34	57.85
DISSOLVED ORGANIC CARBO	mg/L	8	7.60	2.00	4.81	2.29	7.19
FLUORIDE	mg/L	10	0.59	0.06	0.41	0.17	0.59
NITRATE/NITRITE	mg/L	15	4.30	0.40	1.73	0.95	2.72
NITRITE	mg/L	6	0.09	0.03	0.05	0.02	0.08
OIL AND GREASE	mg/L	1	7.20	7.20	7.20		
ORTHOPHOSPHATE	mg/L	4	0.04	0.02	0.04	0.01	0.05
SILICA	mg/L	1	1.70	1.70	1.70		
SULFATE	mg/L	15	57.20	8.00	31.59	12.65	44.75
TOTAL DISSOLVED SOLIDS	mg/L	15	458.00	100.00	292.27	131.12	428.63
TOTAL ORGANIC CARBON	mg/L	8	5.30	3.00	4.21	0.91	5.16
TOTAL SUSPENDED SOLIDS	mg/L	13	1,900.00	6.00	287.08	583.27	893.68

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW094

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	15	332.00	69.70	136.91	73.65	213.50
ANTIMONY	µg/L	14	99.10	10.30	57.26	27.79	86.16
BARIUM	µg/L	18	227.00	146.00	199.72	23.10	223.74
BERYLLIUM	µg/L	2	3.40	2.50	2.95	0.64	3.61
CADMIUM	µg/L	6	4.70	1.90	3.62	1.05	4.71
CALCIUM	µg/L	18	328,000.00	181,000.00	230,555.56	43,095.27	275,374.64
CESIUM	µg/L	2	130.00	110.00	120.00	14.14	134.71
CHROMIUM	µg/L	16	26.60	9.00	18.92	4.55	23.65
COBALT	µg/L	8	8.50	3.40	5.84	2.08	8.00
COPPER	µg/L	5	13.00	4.40	7.70	3.36	11.19
IRON	µg/L	15	483.00	22.90	131.08	134.36	270.81
LITHIUM	µg/L	18	360.00	174.00	261.33	59.94	323.67
MAGNESIUM	µg/L	18	86,800.00	52,500.00	67,394.44	12,401.92	80,292.44
MANGANESE	µg/L	11	8.50	1.00	3.56	2.41	6.07
MERCURY	µg/L	1	0.26	0.26	0.26		
MOLYBDENUM	µg/L	9	22.20	4.70	9.73	5.12	15.06
NICKEL	µg/L	9	16.00	4.40	8.59	3.80	12.54
POTASSIUM	µg/L	18	57,500.00	27,400.00	37,661.11	9,037.90	47,060.53
SELENIUM	µg/L	16	12.00	2.00	3.10	2.45	5.65
SILVER	µg/L	6	5.70	2.10	3.88	1.38	5.31
SODIUM	µg/L	18	422,000.00	239,000.00	317,944.44	61,615.96	382,025.04
STRONTIUM	µg/L	18	2,600.00	1,530.00	1,922.22	368.63	2,305.60
TIN	µg/L	9	64.90	23.10	46.61	13.10	60.23
VANADIUM	µg/L	16	12.80	4.20	8.12	2.30	10.51
ZINC	µg/L	8	41.00	10.20	22.18	12.48	35.15

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	8.00	8.00	8.00		
DI-n-BUTYL PHTHALATE	µg/L	1	3.00	3.00	3.00		
TRICHLOROETHENE	µg/L	1	1.00	1.00	1.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.01	0.00	0.01	0.00	0.01
CESIUM-137	pCi/L	7	0.66	-0.46	0.15	0.34	0.51
GROSS ALPHA	pCi/L	9	68.07	7.87	28.65	17.40	46.75
GROSS BETA	pCi/L	10	209.50	26.02	63.90	52.68	118.68
NEPTUNIUM-237	pCi/L	2	0.31	0.13	0.22	0.13	0.35
PLUTONIUM-239/240	pCi/L	6	0.03	0.00	0.01	0.01	0.02
RADIUM-226	pCi/L	5	0.64	0.29	0.39	0.14	0.54
STRONTIUM-89,90	pCi/L	5	1.91	0.45	1.08	0.64	1.75

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW094

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TRITIUM	pCi/L	9	1,589.00	900.00	1,243.04	229.21	1,481.42
URANIUM-233.-234	pCi/L	8	39.25	0.05	21.99	12.55	35.05
URANIUM-234	pCi/L	2	28.00	28.00	28.00	0.00	28.00
URANIUM-235	pCi/L	10	1.60	0.03	0.78	0.42	1.21
URANIUM-238	pCi/L	9	22.50	4.57	15.54	4.97	20.71

CHEMICAL GROUP:

WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	10	360.00	280.00	319.00	32.47	352.77
CARBONATE AS CaCO3	mg/L	4	6.00	0.00	1.75	2.87	4.74
CHLORIDE	mg/L	10	97.00	60.00	74.50	13.34	88.38
DISSOLVED ORGANIC CARBO	mg/L	8	4.00	2.00	3.50	0.76	4.29
FLUORIDE	mg/L	10	0.70	0.50	0.58	0.06	0.65
NITRATE/NITRITE	mg/L	10	390.00	210.00	293.00	70.88	366.71
NITRITE	mg/L	4	0.09	0.03	0.05	0.03	0.08
OIL AND GREASE	mg/L	9	1.30	0.30	0.63	0.33	0.97
ORTHOPHOSPHATE	mg/L	13	0.04	0.01	0.02	0.01	0.03
PHOSPHORUS	mg/L	11	0.08	0.03	0.04	0.02	0.06
SILICA	mg/L	10	8.50	7.20	7.88	0.41	8.30
SULFATE	mg/L	10	140.00	65.00	103.30	21.65	125.82
SULFIDE	mg/L	2	1.00	1.00	1.00	0.00	1.00
TOTAL DISSOLVED SOLIDS	mg/L	10	3,400.00	1,800.00	2,540.00	483.51	3,042.85
TOTAL ORGANIC CARBON	mg/L	8	5.00	2.00	3.75	1.16	4.96
TOTAL SUSPENDED SOLIDS	mg/L	8	21.00	5.00	10.38	5.60	16.20

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW095

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	21	1,360.00	12.00	197.80	273.87	482.63
ANTIMONY	µg/L	13	94.70	28.00	66.52	22.98	90.42
ARSENIC	µg/L	3	2.00	1.10	1.70	0.52	2.24
BARIUM	µg/L	23	217.00	65.00	155.91	30.78	187.92
BERYLLIUM	µg/L	3	4.00	1.00	2.00	1.73	3.80
CADMIUM	µg/L	6	7.50	1.90	4.98	2.41	7.49
CALCIUM	µg/L	23	392,000.00	122,000.00	290,043.48	66,037.51	358,722.49
CESIUM	µg/L	3	150.00	50.00	96.67	50.33	149.01
CHROMIUM	µg/L	16	32.50	3.50	20.47	9.35	30.20
COBALT	µg/L	10	6.90	2.30	4.32	1.66	6.05
COPPER	µg/L	5	21.00	2.90	9.60	7.55	17.45
IRON	µg/L	17	1,550.00	10.50	237.09	394.15	647.00
LEAD	µg/L	5	8.70	1.10	3.52	2.97	6.61
LITHIUM	µg/L	23	410.00	170.00	333.87	65.04	401.51
MAGNESIUM	µg/L	23	107,000.00	30,200.00	78,208.70	18,522.54	97,472.14
MANGANESE	µg/L	21	25.80	2.90	7.77	4.56	12.51
MERCURY	µg/L	5	0.63	0.10	0.31	0.22	0.54
MOLYBDENUM	µg/L	8	13.30	4.10	8.50	3.08	11.70
NICKEL	µg/L	11	17.00	4.60	8.86	4.23	13.26
POTASSIUM	µg/L	23	77,000.00	23,600.00	57,052.17	14,023.87	71,637.00
SELENIUM	µg/L	23	9.40	1.80	6.55	2.30	8.94
SILICON	µg/L	7	7,740.00	5,720.00	6,455.71	886.17	7,377.33
SILVER	µg/L	4	7.60	2.30	4.78	2.23	7.09
SODIUM	µg/L	23	477,000.00	202,000.00	400,695.65	74,051.85	477,709.57
STRONTIUM	µg/L	23	3,440.00	965.00	2,378.48	574.28	2,975.73
TIN	µg/L	6	76.40	19.60	43.28	23.28	67.49
VANADIUM	µg/L	13	14.70	2.00	8.64	4.27	13.07
ZINC	µg/L	15	71.30	9.80	32.94	16.51	50.11

CHEMICAL GROUP: ORGANICS

BROMOCHLOROMETHANE	µg/L	1	6.50	6.50	6.50		
CARBON TETRACHLORIDE	µg/L	4	3.00	1.00	1.58	0.95	2.57
CHLOROFORM	µg/L	8	2.40	1.00	1.71	0.61	2.34
cis-1,2-DICHLOROETHENE	µg/L	1	0.32	0.32	0.32		
CYANIDE	µg/L	1	62.50	62.50	62.50		
DI-n-BUTYL PHTHALATE	µg/L	1	4.00	4.00	4.00		
DIETHYL PHTHALATE	µg/L	1	4.00	4.00	4.00		
ENDOSULFAN I	µg/L	1	5.60	5.60	5.60		
METHYLENE CHLORIDE	µg/L	3	7.80	1.00	3.93	3.49	7.57
PENTACHLOROPHENOL	µg/L	1	20.00	20.00	20.00		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW095

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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TOLUENE	µg/L	1	0.49	0.49	0.49		
TRICHLOROETHENE	µg/L	11	7.00	1.00	3.26	1.47	4.80

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	8	0.18	0.00	0.03	0.06	0.10
CESIUM-137	pCi/L	8	0.92	-0.63	0.14	0.45	0.60
GROSS ALPHA	pCi/L	12	113.50	11.00	58.92	28.65	88.72
GROSS BETA	pCi/L	12	160.00	11.00	85.78	39.73	127.10
NEPTUNIUM-237	pCi/L	3	0.33	0.00	0.22	0.19	0.41
PLUTONIUM-239/240	pCi/L	7	0.06	0.01	0.02	0.02	0.04
RADIUM-226	pCi/L	5	0.73	0.39	0.49	0.14	0.63
STRONTIUM-89,90	pCi/L	6	1.50	0.30	0.85	0.45	1.32
TRITIUM	pCi/L	10	3,659.90	630.00	1,619.19	830.03	2,482.42
URANIUM-233,-234	pCi/L	8	76.34	6.19	54.52	22.32	77.74
URANIUM-234	pCi/L	2	64.00	2.10	33.05	43.77	78.57
URANIUM-235	pCi/L	9	2.85	0.35	2.08	0.75	2.86
URANIUM-238	pCi/L	10	46.45	1.10	31.15	16.55	48.36

CHEMICAL GROUP: WATER QUALITY PARAMETERS

ALKALINITY AS CaCO3	mg/L	1	290.00	290.00	290.00		
BICARBONATE AS CaCO3	mg/L	14	338.00	150.00	280.29	44.79	326.87
CARBONATE AS CaCO3	mg/L	3	1.00	0.00	0.33	0.58	0.93
CHLORIDE	mg/L	13	160.00	72.00	112.92	19.70	133.42
DISSOLVED ORGANIC CARBO	mg/L	8	9.00	3.00	5.38	2.33	7.79
FLUORIDE	mg/L	14	1.20	0.80	1.08	0.13	1.21
NITRATE/NITRITE	mg/L	15	620.00	47.60	395.04	137.34	537.87
NITRITE	mg/L	11	0.12	0.02	0.06	0.04	0.10
OIL AND GREASE	mg/L	8	1.60	0.30	0.83	0.44	1.28
ORTHOPHOSPHATE	mg/L	12	0.11	0.01	0.03	0.04	0.07
pH	pH	1	7.60	7.60	7.60		
PHOSPHORUS	mg/L	11	0.16	0.02	0.04	0.04	0.09
SILICA	mg/L	12	7.20	4.50	6.61	0.72	7.35
SULFATE	mg/L	14	270.00	120.00	173.36	49.53	224.86
SULFIDE	mg/L	4	3.00	2.00	2.50	0.58	3.10
TOTAL DISSOLVED SOLIDS	mg/L	15	4,400.00	1,500.00	3,488.67	745.45	4,263.94
TOTAL ORGANIC CARBON	mg/L	9	9.00	3.00	6.08	1.99	8.15
TOTAL SUSPENDED SOLIDS	mg/L	9	48.00	6.00	16.78	13.90	31.23

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW101

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	9	1,000.00	30.00	335.22	306.85	654.35
BARIUM	µg/L	12	54.00	23.70	36.69	8.31	45.34
CADMIUM	µg/L	1	1.60	1.60	1.60		
CALCIUM	µg/L	12	20,000.00	11,300.00	14,691.67	3,103.21	17,919.01
CESIUM	µg/L	1	50.00	50.00	50.00		
CHROMIUM	µg/L	1	2.90	2.90	2.90		
COPPER	µg/L	6	15.50	2.40	7.23	5.00	12.43
IRON	µg/L	12	1,000.00	23.20	335.77	313.85	662.17
LEAD	µg/L	6	4.90	1.00	3.13	1.43	4.62
LITHIUM	µg/L	4	4.30	2.60	3.45	0.93	4.41
MAGNESIUM	µg/L	12	2,790.00	1,490.00	1,998.33	475.24	2,492.58
MANGANESE	µg/L	12	120.00	3.20	28.73	31.23	61.20
POTASSIUM	µg/L	8	1,560.00	740.00	1,109.75	300.31	1,422.08
SILICON	µg/L	14	8,130.00	2,190.00	3,595.71	1,503.17	5,159.01
SODIUM	µg/L	12	12,600.00	3,320.00	5,705.83	3,207.73	9,041.87
STRONTIUM	µg/L	12	95.80	48.60	67.82	17.10	85.61
THALLIUM	µg/L	1	1.40	1.40	1.40		
VANADIUM	µg/L	1	3.90	3.90	3.90		
ZINC	µg/L	8	29.00	4.30	13.99	9.17	23.52

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	2	14.00	12.00	13.00	1.41	14.47
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	1.00	1.00	1.00		
BROMODICHLOROMETHANE	µg/L	1	4.00	4.00	4.00		
CHLOROFORM	µg/L	9	41.00	17.00	27.67	10.49	38.57
METHYLENE CHLORIDE	µg/L	5	21.00	3.00	10.00	7.38	17.68

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	7	0.35	0.00	0.06	0.13	0.20
CESIUM-137	pCi/L	6	0.88	-0.30	0.31	0.38	0.70
GROSS ALPHA	pCi/L	6	2.00	0.15	0.68	0.70	1.41
GROSS BETA	pCi/L	8	170.10	1.30	23.73	59.17	85.26
NEPTUNIUM-237	pCi/L	2	0.10	-0.01	0.04	0.08	0.12
PLUTONIUM-239/240	pCi/L	6	0.03	0.00	0.01	0.01	0.02
STRONTIUM-89	pCi/L	1	-0.41	-0.41	-0.41		
STRONTIUM-89,90	pCi/L	6	0.48	-0.28	0.30	0.29	0.60
STRONTIUM-90	pCi/L	1	0.22	0.22	0.22		
TRITIUM	pCi/L	6	284.30	-77.93	92.88	123.72	221.54
URANIUM-233,-234	pCi/L	7	0.49	0.01	0.21	0.18	0.40
URANIUM-234	pCi/L	1	0.15	0.15	0.15		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW101

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
URANIUM-235	pCi/L	7	0.13	-0.01	0.06	0.06	0.12
URANIUM-238	pCi/L	7	0.22	0.04	0.14	0.06	0.21

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	8	43.80	28.30	34.56	6.24	41.05
CHLORIDE	mg/L	3	8.00	7.20	7.60	0.40	8.02
DISSOLVED ORGANIC CARBO	mg/L	4	6.20	2.00	4.13	1.96	6.16
FLUORIDE	mg/L	7	0.29	0.13	0.20	0.05	0.26
NITRATE/NITRITE	mg/L	2	3.20	3.20	3.20	0.00	3.20
NITRITE	mg/L	1	0.02	0.02	0.02		
ORTHOPHOSPHATE	mg/L	2	0.06	0.06	0.06	0.00	0.06
PHOSPHORUS	mg/L	3	0.09	0.07	0.07	0.01	0.09
SULFATE	mg/L	7	37.00	16.80	22.76	7.56	30.62
TOTAL DISSOLVED SOLIDS	mg/L	7	118.00	26.00	81.43	30.48	113.13
TOTAL ORGANIC CARBON	mg/L	4	3.00	1.70	2.15	0.58	2.75
TOTAL SUSPENDED SOLIDS	mg/L	9	118.00	6.00	44.56	45.32	91.69

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW117

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP:

METALS

ALUMINUM	µg/L	3	7,390.00	170.00	2,807.00	3,984.00	6,950.36
ANTIMONY	µg/L	1	16.40	16.40	16.40		
ARSENIC	µg/L	1	2.10	2.10	2.10		
BARIUM	µg/L	4	180.00	52.80	128.45	61.87	192.79
BERYLLIUM	µg/L	1	1.00	1.00	1.00		
CALCIUM	µg/L	4	80,000.00	21,200.00	49,450.00	32,126.99	82,862.07
CHROMIUM	µg/L	3	11.00	5.50	7.97	2.79	10.87
COBALT	µg/L	1	8.50	8.50	8.50		
COPPER	µg/L	3	11.80	8.40	10.03	1.70	11.81
IRON	µg/L	4	6,040.00	128.00	3,714.50	2,584.06	6,401.92
LEAD	µg/L	3	7.80	4.00	5.43	2.06	7.58
LITHIUM	µg/L	3	5.00	4.70	4.87	0.15	5.03
MAGNESIUM	µg/L	4	18,400.00	5,180.00	11,777.50	7,145.28	19,208.60
MANGANESE	µg/L	4	1,460.00	50.10	717.78	736.10	1,483.32
MOLYBDENUM	µg/L	1	9.20	9.20	9.20		
POTASSIUM	µg/L	3	3,650.00	2,370.00	3,003.33	640.10	3,669.04
SILICON	µg/L	4	19,400.00	3,100.00	8,810.00	7,266.11	16,366.76
SILVER	µg/L	2	5.10	3.30	4.20	1.27	5.52
SODIUM	µg/L	4	52,900.00	43,200.00	47,700.00	4,257.54	52,127.84
STRONTIUM	µg/L	4	460.00	142.00	295.50	173.09	475.52
TIN	µg/L	2	30.60	26.60	28.60	2.83	31.54
VANADIUM	µg/L	2	12.60	7.90	10.25	3.32	13.71
ZINC	µg/L	4	67.60	11.80	34.08	23.75	58.78

CHEMICAL GROUP:

RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.00	0.00	0.00		
CESIUM-137	pCi/L	1	0.00	0.00	0.00		
GROSS ALPHA	pCi/L	2	1.80	0.07	0.93	1.22	2.21
GROSS BETA	pCi/L	2	5.70	1.10	3.40	3.25	6.78
NEPTUNIUM-237	pCi/L	1	-0.05	-0.05	-0.05		
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	1	0.00	0.00	0.00		
STRONTIUM-89,90	pCi/L	1	6.17	6.17	6.17		
STRONTIUM-90	pCi/L	1	0.72	0.72	0.72		
TRITIUM	pCi/L	1	295.00	295.00	295.00		
URANIUM-233,-234	pCi/L	1	0.39	0.39	0.39		
URANIUM-234	pCi/L	1	1.10	1.10	1.10		
URANIUM-235	pCi/L	1	0.07	0.07	0.07		
URANIUM-238	pCi/L	2	0.92	0.27	0.59	0.46	1.07

Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW117

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO ₃	mg/L	2	279.00	45.80	162.40	164.90	333.89
CHLORIDE	mg/L	2	84.10	52.70	68.40	22.20	91.49
DISSOLVED ORGANIC CARBO	mg/L	3	5.40	5.00	5.20	0.20	5.41
FLUORIDE	mg/L	2	0.51	0.24	0.38	0.19	0.57
NITRATE/NITRITE	mg/L	2	0.69	0.61	0.65	0.06	0.71
OIL AND GREASE	mg/L	1	7.60	7.60	7.60		
ORTHOPHOSPHATE	mg/L	1	0.10	0.10	0.10		
PHOSPHORUS	mg/L	1	0.14	0.14	0.14		
SULFATE	mg/L	1	30.60	30.60	30.60		
TOTAL DISSOLVED SOLIDS	mg/L	2	400.00	194.00	297.00	145.66	448.49
TOTAL ORGANIC CARBON	mg/L	2	7.00	4.70	5.85	1.63	7.54
TOTAL SUSPENDED SOLIDS	mg/L	2	129.00	43.00	86.00	60.81	149.24

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW118

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	13	120,000.00	21.90	22,061.00	38,486.42	62,086.88
ANTIMONY	µg/L	2	92.60	55.40	74.00	26.30	101.36
ARSENIC	µg/L	4	5.80	3.00	4.55	1.18	5.78
BARIUM	µg/L	18	1,980.00	65.20	288.58	462.82	769.91
BERYLLIUM	µg/L	5	10.80	0.60	4.18	4.03	8.37
CADMIUM	µg/L	2	9.80	4.90	7.35	3.46	10.95
CALCIUM	µg/L	18	125,000.00	25,000.00	56,238.89	24,748.74	81,977.58
CESIUM	µg/L	3	60.00	50.00	53.33	5.77	59.34
CHROMIUM	µg/L	6	130.00	5.50	49.67	47.90	99.49
COBALT	µg/L	4	87.10	11.00	38.60	33.43	73.36
COPPER	µg/L	9	192.00	3.40	43.83	61.89	108.20
IRON	µg/L	18	156,000.00	13.00	18,000.54	40,788.09	60,420.16
LEAD	µg/L	9	103.00	1.70	26.36	34.74	62.48
LITHIUM	µg/L	17	119.00	4.00	24.36	31.38	57.00
MAGNESIUM	µg/L	18	50,000.00	6,990.00	16,602.78	9,696.98	26,687.64
MANGANESE	µg/L	18	3,640.00	5.40	398.97	889.82	1,324.38
MOLYBDENUM	µg/L	1	15.80	15.80	15.80		
NICKEL	µg/L	5	183.00	6.50	68.96	68.61	140.31
POTASSIUM	µg/L	16	17,200.00	1,100.00	4,479.38	4,432.90	9,089.59
SELENIUM	µg/L	1	1.10	1.10	1.10		
SILICON	µg/L	17	8,160.00	3.00	4,841.35	1,933.15	6,851.83
SODIUM	µg/L	18	76,600.00	16,000.00	39,877.78	17,773.10	58,361.80
STRONTIUM	µg/L	18	805.00	190.00	371.00	165.04	542.64
TIN	µg/L	3	94.60	26.40	58.80	34.23	94.40
VANADIUM	µg/L	8	305.00	2.00	87.26	110.21	201.88
ZINC	µg/L	15	1,260.00	3.30	231.10	360.72	606.25

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	2.70	0.00	0.54	1.21	1.80
CESIUM-137	pCi/L	5	0.25	-0.20	0.04	0.19	0.24
GROSS ALPHA	pCi/L	20	79.00	-0.06	8.71	18.36	27.81
GROSS BETA	pCi/L	24	110.00	1.79	10.68	22.12	33.69
NEPTUNIUM-237	pCi/L	2	-0.05	-0.26	-0.16	0.15	0.00
PLUTONIUM-236	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-238	pCi/L	1	0.00	0.00	0.00		
PLUTONIUM-239/240	pCi/L	6	0.02	0.00	0.01	0.01	0.01
RADIUM-226	pCi/L	1	0.28	0.28	0.28		
STRONTIUM-89	pCi/L	1	-0.01	-0.01	-0.01		
STRONTIUM-89,90	pCi/L	4	1.81	0.00	0.74	0.76	1.53
STRONTIUM-90	pCi/L	1	0.54	0.54	0.54		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW118

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TRITIUM	pCi/L	31	197.70	-85.70	35.12	82.04	120.43
URANIUM-233,-234	pCi/L	4	2.27	0.34	1.32	0.79	2.14
URANIUM-234	pCi/L	3	2.30	1.50	2.00	0.44	2.45
URANIUM-235	pCi/L	5	0.08	0.00	0.04	0.03	0.07
URANIUM-238	pCi/L	7	2.00	0.25	1.23	0.72	1.98

CHEMICAL GROUP: WATER QUALITY PARAMETERS

ALKALINITY AS CaCO3	mg/L	3	85.00	57.00	70.67	14.01	85.24
BICARBONATE AS CaCO3	mg/L	14	239.00	57.00	141.47	68.05	212.24
CHLORIDE	mg/L	14	123.00	17.00	44.79	31.72	77.77
DISSOLVED ORGANIC CARBO	mg/L	4	6.00	4.90	5.28	0.50	5.79
FLUORIDE	mg/L	11	0.53	0.28	0.40	0.08	0.48
NITRATE/NITRITE	mg/L	6	1.80	0.11	0.94	0.63	1.60
NITRITE	mg/L	3	0.04	0.02	0.03	0.01	0.04
OIL AND GREASE	mg/L	1	7.50	7.50	7.50		
ORTHOPHOSPHATE	mg/L	1	0.04	0.04	0.04		
PHOSPHORUS	mg/L	3	0.06	0.04	0.05	0.01	0.06
SILICA	mg/L	2	3.20	2.70	2.95	0.35	3.32
SULFATE	mg/L	13	25.50	9.00	16.67	4.77	21.63
TOTAL DISSOLVED SOLIDS	mg/L	15	372.00	130.00	248.00	74.12	325.08
TOTAL ORGANIC CARBON	mg/L	4	6.00	4.10	4.83	0.85	5.71
TOTAL SUSPENDED SOLIDS	mg/L	13	8,200.00	6.00	1,132.38	2,328.92	3,554.46

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW122

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
CHEMICAL GROUP:		METALS					
ALUMINUM	µg/L	10	229.00	30.00	72.56	62.44	137.50
ANTIMONY	µg/L	1	14.90	14.90	14.90		
ARSENIC	µg/L	1	1.00	1.00	1.00		
BARIUM	µg/L	16	150.00	19.00	92.82	42.06	136.56
CADMIUM	µg/L	1	1.20	1.20	1.20		
CALCIUM	µg/L	16	81,000.00	9,800.00	53,012.50	23,072.29	77,007.68
CESIUM	µg/L	3	70.00	50.00	60.00	10.00	70.40
COBALT	µg/L	1	2.70	2.70	2.70		
COPPER	µg/L	11	21.00	3.10	12.10	6.42	18.78
IRON	µg/L	15	475.00	11.00	127.58	134.47	267.43
LEAD	µg/L	10	5.50	0.90	2.51	1.26	3.82
LITHIUM	µg/L	13	9.30	5.40	7.38	1.24	8.66
MAGNESIUM	µg/L	16	22,000.00	2,200.00	14,357.50	6,592.75	21,213.96
MANGANESE	µg/L	16	98.50	8.30	45.09	26.12	72.26
MERCURY	µg/L	3	0.22	0.21	0.21	0.01	0.22
MOLYBDENUM	µg/L	1	6.00	6.00	6.00		
NICKEL	µg/L	1	19.00	19.00	19.00		
POTASSIUM	µg/L	15	9,300.00	1,470.00	3,927.33	2,280.94	6,299.51
SILICON	µg/L	23	5,860.00	1,010.00	3,540.87	1,569.65	5,173.30
SODIUM	µg/L	16	70,000.00	14,000.00	44,356.25	17,813.03	62,881.80
STRONTIUM	µg/L	19	640.00	70.00	411.79	172.72	591.42
VANADIUM	µg/L	1	3.00	3.00	3.00		
ZINC	µg/L	15	46.00	7.90	28.09	12.74	41.34
CHEMICAL GROUP:		ORGANICS					
alpha-BHC	µg/L	1	0.01	0.01	0.01		
beta-BHC	µg/L	1	0.02	0.02	0.02		
CHLOROMETHANE	µg/L	1	17.00	17.00	17.00		
delta-BHC	µg/L	1	0.01	0.01	0.01		
METHYLENE CHLORIDE	µg/L	1	4.00	4.00	4.00		
CHEMICAL GROUP:		RADIONUCLIDES					
AMERICIUM-241	pCi/L	5	0.53	0.00	0.11	0.23	0.35
CESIUM-137	pCi/L	5	0.35	0.07	0.24	0.11	0.36
GROSS ALPHA	pCi/L	8	11.79	1.18	5.59	3.30	9.02
GROSS BETA	pCi/L	9	110.55	1.83	17.39	35.01	53.80
NEPTUNIUM-237	pCi/L	2	0.09	-0.15	-0.03	0.17	0.15
PLUTONIUM-239/240	pCi/L	6	0.70	0.00	0.12	0.28	0.41
RADIUM-226	pCi/L	3	0.41	0.11	0.21	0.17	0.39
STRONTIUM-89	pCi/L	1	0.15	0.15	0.15		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW122

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
STRONTIUM-89,90	pCi/L	6	1.02	-0.40	0.38	0.48	0.88
STRONTIUM-90	pCi/L	1	0.34	0.34	0.34		
TRITIUM	pCi/L	6	361.80	92.70	204.04	107.98	316.34
URANIUM-233,-234	pCi/L	7	4.29	0.70	2.60	1.32	3.98
URANIUM-234	pCi/L	2	2.20	0.99	1.60	0.86	2.48
URANIUM-235	pCi/L	7	0.29	0.04	0.16	0.09	0.26
URANIUM-238	pCi/L	9	4.12	0.78	2.43	1.10	3.58

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	10	282.00	33.70	191.51	83.52	278.37
CARBONATE AS CaCO3	mg/L	2	24.50	22.50	23.50	1.41	24.97
CHLORIDE	mg/L	9	93.50	22.00	63.50	22.80	87.21
DISSOLVED ORGANIC CARBO	mg/L	6	8.10	3.00	5.28	2.09	7.46
FLUORIDE	mg/L	9	0.96	0.36	0.70	0.19	0.90
NITRATE/NITRITE	mg/L	9	4.80	1.20	2.46	1.14	3.65
NITRITE	mg/L	3	0.41	0.03	0.28	0.22	0.50
OIL AND GREASE	mg/L	2	8.80	8.20	8.50	0.42	8.94
SULFATE	mg/L	9	43.00	8.20	31.74	11.96	44.18
TOTAL DISSOLVED SOLIDS	mg/L	9	540.00	112.00	342.00	140.29	487.90
TOTAL ORGANIC CARBON	mg/L	5	10.00	3.50	5.10	2.75	7.96
TOTAL SUSPENDED SOLIDS	mg/L	5	11.00	6.00	7.80	2.05	9.93

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW123

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	2	260.00	28.00	144.00	164.05	314.61
ARSENIC	µg/L	1	2.50	2.50	2.50		
BARIUM	µg/L	2	160.00	160.00	160.00	0.00	160.00
CALCIUM	µg/L	2	88,000.00	87,000.00	87,500.00	707.11	88,235.39
IRON	µg/L	1	210.00	210.00	210.00		
LEAD	µg/L	2	15.00	1.60	8.30	9.48	18.15
LITHIUM	µg/L	2	18.00	14.00	16.00	2.83	18.94
MAGNESIUM	µg/L	2	24,000.00	23,000.00	23,500.00	707.11	24,235.39
MANGANESE	µg/L	2	6.60	6.30	6.45	0.21	6.67
POTASSIUM	µg/L	2	3,400.00	3,300.00	3,350.00	70.71	3,423.54
SELENIUM	µg/L	1	7.10	7.10	7.10		
SILICON	µg/L	6	6,720.00	5,430.00	6,221.67	532.74	6,775.72
SODIUM	µg/L	2	61,000.00	57,000.00	59,000.00	2,828.43	61,941.56
STRONTIUM	µg/L	2	710.00	700.00	705.00	7.07	712.35
VANADIUM	µg/L	2	11.00	10.00	10.50	0.71	11.24
ZINC	µg/L	2	55.00	37.00	46.00	12.73	59.24

CHEMICAL GROUP: ORGANICS

METHYLENE CHLORIDE	µg/L	1	7.00	7.00	7.00		
TETRACHLOROETHENE	µg/L	2	5.00	3.00	4.00	1.41	5.47

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	3	0.02	0.00	0.01	0.01	0.02
CESIUM-137	pCi/L	3	0.35	0.16	0.23	0.10	0.34
GROSS ALPHA	pCi/L	3	7.11	2.80	5.22	2.20	7.51
GROSS BETA	pCi/L	3	8.96	3.34	6.63	2.93	9.68
PLUTONIUM-239/240	pCi/L	3	0.01	0.00	0.00	0.01	0.01
RADIUM-226	pCi/L	2	0.20	0.17	0.19	0.02	0.20
STRONTIUM-89,90	pCi/L	3	0.47	0.21	0.30	0.15	0.45
TRITIUM	pCi/L	3	161.60	63.67	113.79	49.01	164.76
URANIUM-233,-234	pCi/L	3	4.73	4.46	4.57	0.14	4.72
URANIUM-235	pCi/L	3	0.21	0.04	0.12	0.09	0.21
URANIUM-238	pCi/L	3	4.41	4.04	4.19	0.20	4.39

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	2	249.00	197.00	223.00	36.77	261.24
CHLORIDE	mg/L	2	102.00	98.50	100.25	2.47	102.82
FLUORIDE	mg/L	2	1.60	1.60	1.60	0.00	1.60
NITRATE/NITRITE	mg/L	2	8.20	8.20	8.20	0.00	8.20
PHOSPHORUS	mg/L	1	0.07	0.07	0.07		

Summary Statistics for Surface-Water Data (Detects Only)
1991 - 1993

LOCATION: SW123

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
SULFATE	mg/L	2	67.60	50.60	59.10	12.02	71.60
TOTAL DISSOLVED SOLIDS	mg/L	2	508.00	494.00	501.00	9.90	511.30
TOTAL SUSPENDED SOLIDS	mg/L	2	6.00	6.00	6.00	0.00	6.00

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW124

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	1	1,970.00	1,970.00	1,970.00		
BARIUM	µg/L	2	89.50	66.50	78.00	16.26	94.91
CALCIUM	µg/L	2	57,500.00	55,200.00	56,350.00	1,626.35	58,041.40
CHROMIUM	µg/L	1	10.60	10.60	10.60		
COPPER	µg/L	2	13.40	8.10	10.75	3.75	14.65
IRON	µg/L	2	2,670.00	22.10	1,346.05	1,872.35	3,293.29
LEAD	µg/L	1	11.70	11.70	11.70		
LITHIUM	µg/L	2	9.50	5.90	7.70	2.55	10.35
MAGNESIUM	µg/L	2	8,140.00	7,750.00	7,945.00	275.77	8,231.80
MANGANESE	µg/L	2	42.60	5.60	24.10	26.16	51.31
MOLYBDENUM	µg/L	1	7.20	7.20	7.20		
POTASSIUM	µg/L	2	4,080.00	3,800.00	3,940.00	197.99	4,145.91
SELENIUM	µg/L	2	2.00	1.90	1.95	0.07	2.02
SILICON	µg/L	2	8,350.00	4,590.00	6,470.00	2,658.72	9,235.07
SODIUM	µg/L	2	25,000.00	24,300.00	24,650.00	494.97	25,164.77
STRONTIUM	µg/L	2	252.00	252.00	252.00	0.00	252.00
VANADIUM	µg/L	1	7.10	7.10	7.10		
ZINC	µg/L	1	253.00	253.00	253.00		

CHEMICAL GROUP: ORGANICS

AROCOR-1254	µg/L	1	12.00	12.00	12.00		
BIS(2-ETHYLHEXYL)PHTHALAT	µg/L	1	1.00	1.00	1.00		
CARBON TETRACHLORIDE	µg/L	1	28.00	28.00	28.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	1	0.15	0.15	0.15		
CESIUM-137	pCi/L	1	0.12	0.12	0.12		
GROSS ALPHA	pCi/L	1	10.00	10.00	10.00		
GROSS BETA	pCi/L	1	15.00	15.00	15.00		
NEPTUNIUM-237	pCi/L	1	-0.01	-0.01	-0.01		
PLUTONIUM-239/240	pCi/L	1	0.01	0.01	0.01		
STRONTIUM-89	pCi/L	1	-0.61	-0.61	-0.61		
STRONTIUM-90	pCi/L	1	0.30	0.30	0.30		
TRITIUM	pCi/L	1	630.00	630.00	630.00		
URANIUM-234	pCi/L	1	1.90	1.90	1.90		
URANIUM-235	pCi/L	1	0.10	0.10	0.10		
URANIUM-238	pCi/L	1	1.10	1.10	1.10		

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	1	93.40	93.40	93.40		
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Summary Statistics for Surface-Water Data (Detects Only) **1991 - 1993**

LOCATION: SW124

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
CHLORIDE	mg/L	1	23.20	23.20	23.20		
DISSOLVED ORGANIC CARBO	mg/L	1	5.70	5.70	5.70		
FLUORIDE	mg/L	1	0.44	0.44	0.44		
NITRATE/NITRITE	mg/L	1	10.50	10.50	10.50		
NITRITE	mg/L	1	0.06	0.06	0.06		
PHOSPHORUS	mg/L	1	0.22	0.22	0.22		
SULFATE	mg/L	1	81.60	81.60	81.60		
TOTAL DISSOLVED SOLIDS	mg/L	1	358.00	358.00	358.00		
TOTAL ORGANIC CARBON	mg/L	2	4.20	4.10	4.15	0.07	4.22
TOTAL SUSPENDED SOLIDS	mg/L	1	112.00	112.00	112.00	—	

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW129

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	11	1,400.00	19.00	463.06	508.73	992.14
ANTIMONY	µg/L	2	16.70	15.40	16.05	0.92	17.01
ARSENIC	µg/L	2	2.30	0.80	1.55	1.06	2.65
BARIUM	µg/L	16	177.00	38.90	136.99	32.10	170.38
BERYLLIUM	µg/L	1	1.10	1.10	1.10		
CADMIUM	µg/L	1	4.80	4.80	4.80		
CALCIUM	µg/L	16	87,000.00	13,300.00	69,943.75	16,455.43	87,057.40
CESIUM	µg/L	2	60.00	50.00	55.00	7.07	62.35
CHROMIUM	µg/L	4	6.30	2.20	4.33	2.28	6.70
COBALT	µg/L	1	2.80	2.80	2.80		
COPPER	µg/L	8	14.10	3.20	7.37	3.42	10.93
IRON	µg/L	13	1,200.00	22.40	358.15	404.26	778.58
LEAD	µg/L	10	5.30	1.40	2.94	1.23	4.22
LITHIUM	µg/L	11	8.90	4.30	6.63	1.62	8.31
MAGNESIUM	µg/L	16	23,000.00	1,570.00	18,585.63	4,776.17	23,552.85
MANGANESE	µg/L	16	160.00	6.70	50.48	42.46	94.64
MERCURY	µg/L	3	0.54	0.32	0.46	0.12	0.59
MOLYBDENUM	µg/L	1	5.00	5.00	5.00		
NICKEL	µg/L	1	7.30	7.30	7.30		
POTASSIUM	µg/L	14	3,520.00	1,200.00	2,036.43	641.76	2,703.86
SILICON	µg/L	16	10,200.00	2,630.00	6,161.25	2,580.15	8,844.61
SILVER	µg/L	1	3.30	3.30	3.30		
SODIUM	µg/L	16	20,000.00	5,270.00	15,335.63	3,480.81	18,955.67
STRONTIUM	µg/L	16	530.00	58.50	440.16	109.49	554.03
VANADIUM	µg/L	8	6.30	2.60	4.38	1.20	5.63
ZINC	µg/L	9	15.10	3.40	7.71	3.65	11.51

CHEMICAL GROUP: ORGANICS

ACETONE	µg/L	1	2.00	2.00	2.00		
METHYLENE CHLORIDE	µg/L	1	6.00	6.00	6.00		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	5	0.03	0.00	0.01	0.01	0.02
CESIUM-137	pCi/L	6	0.82	-0.20	0.33	0.33	0.67
GROSS ALPHA	pCi/L	7	9.63	1.10	4.80	2.84	7.76
GROSS BETA	pCi/L	8	9.10	2.70	5.66	2.42	8.17
NEPTUNIUM-237	pCi/L	3	0.16	-0.33	-0.06	0.25	0.20
PLUTONIUM-239/240	pCi/L	4	0.01	0.00	0.00	0.00	0.01
RADIUM-226	pCi/L	3	0.54	0.19	0.31	0.20	0.52
STRONTIUM-89	pCi/L	1	-0.23	-0.23	-0.23		

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW129

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
STRONTIUM-89,90	pCi/L	3	0.92	0.77	0.86	0.08	0.94
STRONTIUM-90	pCi/L	2	0.59	-0.08	0.26	0.47	0.75
TRITIUM	pCi/L	6	1,000.00	59.15	280.41	370.15	665.36
URANIUM-233,-234	pCi/L	5	2.60	1.69	1.93	0.38	2.33
URANIUM-234	pCi/L	3	2.90	1.80	2.50	0.61	3.13
URANIUM-235	pCi/L	5	0.12	0.00	0.06	0.05	0.12
URANIUM-238	pCi/L	8	5.20	1.30	2.91	1.26	4.22

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	9	250.00	185.00	227.44	19.01	247.21
CARBONATE AS CaCO3	mg/L	1	4.00	4.00	4.00		
CHLORIDE	mg/L	9	53.80	32.30	45.22	7.05	52.56
DISSOLVED ORGANIC CARBO	mg/L	6	6.40	2.00	4.10	1.64	5.80
FLUORIDE	mg/L	9	0.66	0.54	0.60	0.04	0.64
NITRATE/NITRITE	mg/L	2	0.33	0.14	0.24	0.13	0.37
OIL AND GREASE	mg/L	1	1.00	1.00	1.00		
ORTHOPHOSPHATE	mg/L	4	0.09	0.05	0.07	0.02	0.09
PHOSPHORUS	mg/L	3	0.07	0.03	0.06	0.02	0.08
SILICA	mg/L	1	6.10	6.10	6.10		
SULFATE	mg/L	9	53.60	18.00	30.50	11.89	42.87
TOTAL DISSOLVED SOLIDS	mg/L	9	622.00	338.00	379.11	91.66	474.43
TOTAL ORGANIC CARBON	mg/L	7	9.00	2.00	5.03	2.61	7.75
TOTAL SUSPENDED SOLIDS	mg/L	9	44.00	6.00	27.89	15.24	43.73

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW132

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	70	21,400.00	17.00	531.62	2,594.74	3,230.15
ANTIMONY	µg/L	10	48.50	12.00	30.25	13.45	44.24
ARSENIC	µg/L	46	7.10	0.70	2.19	1.24	3.48
BARIUM	µg/L	135	269.00	15.20	98.52	32.30	132.11
BERYLLIUM	µg/L	12	1.80	0.36	0.86	0.42	1.29
CADMIUM	µg/L	7	5.30	2.20	3.34	1.32	4.72
CALCIUM	µg/L	135	273,000.00	12,200.00	84,482.96	34,214.11	120,065.64
CESIUM	µg/L	12	100.00	2.20	48.52	24.42	73.91
CHROMIUM	µg/L	13	44.00	2.90	10.35	13.01	23.88
COBALT	µg/L	4	9.50	1.50	5.73	3.80	9.67
COPPER	µg/L	67	49.60	2.00	5.55	6.68	12.50
IRON	µg/L	100	30,000.00	6.40	660.19	3,090.72	3,874.54
LEAD	µg/L	45	45.50	0.90	4.38	6.74	11.39
LITHIUM	µg/L	114	83.90	2.80	12.29	8.22	20.84
MAGNESIUM	µg/L	135	35,000.00	1,800.00	18,805.19	6,394.44	25,455.40
MANGANESE	µg/L	130	806.00	3.50	61.77	103.11	169.01
MERCURY	µg/L	12	1.10	0.13	0.34	0.27	0.62
MOLYBDENUM	µg/L	21	13.10	2.10	4.50	2.29	6.89
NICKEL	µg/L	11	25.50	2.70	9.25	6.64	16.16
POTASSIUM	µg/L	128	41,900.00	796.00	4,493.59	5,870.87	10,599.29
SELENIUM	µg/L	111	15.00	1.30	3.56	1.75	5.38
SILICON	µg/L	124	41,900.00	1,110.00	5,075.32	3,629.30	8,849.80
SILVER	µg/L	4	6.70	3.10	5.03	1.94	7.05
SODIUM	µg/L	135	205,000.00	7,820.00	62,915.56	34,461.54	98,755.55
STRONTIUM	µg/L	123	846.00	65.40	519.61	144.62	670.02
TIN	µg/L	2	21.90	14.90	18.40	4.95	23.55
VANADIUM	µg/L	28	62.40	2.30	13.04	15.71	29.38
ZINC	µg/L	92	543.00	2.10	46.49	81.00	130.74

CHEMICAL GROUP: ORGANICS

1,1,1-TRICHLOROETHANE	µg/L	1	2.00	2.00	2.00		
1,1,2,2-TETRACHLOROETHANE	µg/L	1	1.00	1.00	1.00		
1,1-DICHLOROETHANE	µg/L	8	1.00	0.50	0.71	0.16	0.88
1,2-DICHLOROETHENE	µg/L	36	7.00	1.00	4.06	1.66	5.78
2-BUTANONE	µg/L	2	12.00	6.00	9.00	4.24	13.41
2-HEXANONE	µg/L	1	4.00	4.00	4.00		
4-METHYL-2-PENTANONE	µg/L	1	3.00	3.00	3.00		
ACETONE	µg/L	3	28.00	11.00	16.67	9.81	26.87
CHLOROFORM	µg/L	1	6.00	6.00	6.00		
cis-1,2-DICHLOROETHENE	µg/L	7	3.00	2.00	2.29	0.49	2.79

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW132

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
METHYLENE CHLORIDE	µg/L	13	34.00	1.00	7.69	10.08	18.17
TETRACHLOROETHENE	µg/L	8	1.00	0.10	0.39	0.31	0.71
THALLIUM	µg/L	2	1.40	1.40	1.40	0.00	1.40
TOLUENE	µg/L	1	1.00	1.00	1.00		
TRICHLOROETHENE	µg/L	4	4.00	0.20	1.80	1.64	3.51
TRICHLOROFLUOROMETHANE	µg/L	1	8.00	8.00	8.00		
VINYL CHLORIDE	µg/L	2	2.00	1.00	1.50	0.71	2.24
CHEMICAL GROUP: RADIONUCLIDES							
AMERICIUM-241	pCi/L	46	0.66	0.00	0.04	0.11	0.16
CESIUM-137	pCi/L	10	1.50	-0.15	0.19	0.48	0.70
GROSS ALPHA	pCi/L	55	21.06	0.35	5.26	3.67	9.08
GROSS BETA	pCi/L	58	67.78	1.40	8.36	10.22	18.98
NEPTUNIUM-237	pCi/L	2	0.25	0.03	0.14	0.16	0.30
PLUTONIUM-236	pCi/L	8	0.02	0.00	0.01	0.01	0.01
PLUTONIUM-238	pCi/L	5	0.06	0.00	0.02	0.02	0.04
PLUTONIUM-239/240	pCi/L	40	0.38	0.00	0.02	0.06	0.08
RADIUM-226	pCi/L	5	0.83	0.17	0.33	0.28	0.62
STRONTIUM-89	pCi/L	1	0.81	0.81	0.81		
STRONTIUM-89,90	pCi/L	28	8.66	-0.08	1.81	2.60	4.52
STRONTIUM-90	pCi/L	1	0.63	0.63	0.63		
TOTAL RADIOCESIUM	pCi/L	2	5.40	0.80	3.10	3.25	6.48
TRITIUM	pCi/L	7	720.00	22.97	210.94	237.27	457.70
URANIUM, TOTAL	pCi/L	5	8.54	5.70	7.61	1.11	8.76
URANIUM-233,-234	pCi/L	62	5.70	0.01	2.76	1.42	4.24
URANIUM-234	pCi/L	2	2.60	1.50	2.05	0.78	2.86
URANIUM-235	pCi/L	43	0.52	-0.02	0.15	0.11	0.26
URANIUM-238	pCi/L	63	4.85	0.00	2.55	1.29	3.89
CHEMICAL GROUP: WATER QUALITY PARAMETERS							
BICARBONATE AS CaCO3	mg/L	67	290.00	17.70	197.36	86.75	287.57
CARBONATE AS CaCO3	mg/L	17	20.50	2.00	8.74	5.88	14.86
CHLORIDE	mg/L	67	460.00	9.00	84.62	70.33	157.76
DISSOLVED ORGANIC CARBO	mg/L	10	16.80	2.00	6.23	5.58	12.04
FLUORIDE	mg/L	67	1.20	0.20	0.83	0.21	1.04
NITRATE/NITRITE	mg/L	10	7.50	1.80	4.35	1.64	6.06
NITRITE	mg/L	2	0.02	0.02	0.02	0.00	0.02
OIL AND GREASE	mg/L	1	6.90	6.90	6.90		
ORTHOPHOSPHATE	mg/L	3	0.06	0.05	0.06	0.01	0.06
PHOSPHORUS	mg/L	2	0.11	0.06	0.08	0.04	0.12
SULFATE	mg/L	67	697.00	3.00	119.50	131.65	256.42
TOTAL DISSOLVED SOLIDS	mg/L	67	1,200.00	76.00	523.21	184.43	715.01
TOTAL ORGANIC CARBON	mg/L	62	33.00	1.00	5.50	4.40	10.07

Summary Statistics for Surface-Water Data (Detects Only)
1991 - 1993

LOCATION: SW132

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TOTAL SUSPENDED SOLIDS	mg/L	27	740.00	4.00	47.19	147.60	200.69

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW507

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
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CHEMICAL GROUP: METALS

ALUMINUM	µg/L	3	90.80	46.60	72.20	22.92	96.03
ARSENIC	µg/L	3	1.30	1.00	1.17	0.15	1.33
BARIUM	µg/L	6	165.00	149.00	154.83	6.31	161.39
CALCIUM	µg/L	6	80,700.00	76,900.00	78,733.33	1,392.36	80,181.39
CESIUM	µg/L	1	30.00	30.00	30.00		
COPPER	µg/L	1	2.20	2.20	2.20		
IRON	µg/L	4	292.00	195.00	247.75	49.56	299.29
LITHIUM	µg/L	6	7.20	4.20	6.03	1.39	7.48
MAGNESIUM	µg/L	6	23,000.00	21,700.00	22,550.00	561.25	23,133.70
MANGANESE	µg/L	6	36.80	13.90	27.43	8.47	36.24
POTASSIUM	µg/L	6	4,830.00	2,270.00	3,278.33	1,215.79	4,542.75
SILICON	µg/L	6	5,280.00	2,360.00	3,523.33	1,342.78	4,919.83
SODIUM	µg/L	6	20,600.00	19,200.00	19,800.00	469.04	20,287.80
STRONTIUM	µg/L	6	546.00	493.00	524.33	22.38	547.60
ZINC	µg/L	2	14.90	2.50	8.70	8.77	17.82

CHEMICAL GROUP: ORGANICS

PENTACHLOROPHENOL	µg/L	1	5.00	5.00	5.00		
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CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	4	0.08	-0.02	0.02	0.04	0.06
GROSS ALPHA	pCi/L	6	8.30	4.32	6.01	1.64	7.72
GROSS BETA	pCi/L	6	13.00	4.20	9.29	3.55	12.98
PLUTONIUM-239/240	pCi/L	5	0.00	-0.03	-0.01	0.01	0.01
RADIUM-226	pCi/L	3	0.32	0.05	0.18	0.14	0.32
STRONTIUM-89,90	pCi/L	6	0.83	0.19	0.50	0.23	0.74
TOTAL RADIOCESIUM	pCi/L	4	0.70	-0.18	0.43	0.41	0.85
URANIUM-233,-234	pCi/L	5	4.68	0.59	3.00	1.72	4.79
URANIUM-235	pCi/L	5	0.28	0.02	0.17	0.11	0.28
URANIUM-238	pCi/L	5	7.50	0.88	4.73	2.77	7.61

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	3	230.00	210.00	216.67	11.55	228.68
CARBONATE AS CaCO3	mg/L	1	4.00	4.00	4.00		
CHLORIDE	mg/L	3	63.00	55.00	60.00	4.36	64.53
DISSOLVED ORGANIC CARBO	mg/L	3	14.00	8.00	10.67	3.06	13.84
FLUORIDE	mg/L	3	0.70	0.50	0.57	0.12	0.69
SULFATE	mg/L	3	47.00	24.00	38.00	12.29	50.78
TOTAL DISSOLVED SOLIDS	mg/L	3	380.00	370.00	376.67	5.77	382.67
TOTAL ORGANIC CARBON	mg/L	3	15.00	7.00	12.00	4.36	16.53

Summary Statistics for Surface-Water Data (Detects Only) 1991 - 1993

LOCATION: SW507

Chemical Name	Units	# Samples	Max. Value	Min. Value	Avg. Value	Sample Standard Deviation	85% Value
TOTAL SUSPENDED SOLIDS	mg/L	1	5.00	5.00	5.00		

CHEMICAL GROUP: METALS

ALUMINUM	µg/L	1	420.00	420.00	420.00		
BARIUM	µg/L	2	91.50	89.90	90.70	1.13	91.88
CALCIUM	µg/L	2	74,000.00	70,500.00	72,250.00	2,474.87	74,823.87
COBALT	µg/L	2	2.60	2.50	2.55	0.07	2.62
IRON	µg/L	2	486.00	7.70	246.85	338.21	598.59
LEAD	µg/L	1	4.30	4.30	4.30		
LITHIUM	µg/L	2	13.40	11.90	12.65	1.06	13.75
MAGNESIUM	µg/L	2	17,900.00	16,900.00	17,400.00	707.11	18,135.39
MANGANESE	µg/L	2	67.50	61.20	64.35	4.45	68.98
MOLYBDENUM	µg/L	1	2.00	2.00	2.00		
POTASSIUM	µg/L	2	2,840.00	2,700.00	2,770.00	98.99	2,872.95
SELENIUM	µg/L	1	8.30	8.30	8.30		
SILICON	µg/L	2	6,880.00	6,640.00	6,760.00	169.71	6,936.49
SODIUM	µg/L	2	36,900.00	34,700.00	35,800.00	1,555.63	37,417.86
STRONTIUM	µg/L	2	445.00	418.00	431.50	19.09	451.36
ZINC	µg/L	1	15.30	15.30	15.30		

CHEMICAL GROUP: RADIONUCLIDES

AMERICIUM-241	pCi/L	2	0.01	0.01	0.01	0.00	0.01
CESIUM-137	pCi/L	2	0.33	0.28	0.31	0.04	0.35
GROSS ALPHA	pCi/L	1	7.88	7.88	7.88		
GROSS BETA	pCi/L	1	5.35	5.35	5.35		
PLUTONIUM-239/240	pCi/L	2	0.01	0.00	0.00	0.00	0.01
STRONTIUM-89,90	pCi/L	2	0.35	0.22	0.29	0.09	0.38
TRITIUM	pCi/L	1	234.70	234.70	234.70		
URANIUM-233,-234	pCi/L	2	3.09	2.55	2.82	0.38	3.22
URANIUM-235	pCi/L	2	0.12	-0.01	0.06	0.09	0.15
URANIUM-238	pCi/L	2	4.48	4.31	4.39	0.12	4.51

CHEMICAL GROUP: WATER QUALITY PARAMETERS

BICARBONATE AS CaCO3	mg/L	1	226.00	226.00	226.00		
CHLORIDE	mg/L	1	36.60	36.60	36.60		
NITRATE	mg/L	1	3.40	3.40	3.40		
SULFATE	mg/L	1	48.20	48.20	48.20		
TOTAL DISSOLVED SOLIDS	mg/L	1	346.00	346.00	346.00		

PLATE 1

**OPERABLE UNIT AND INDIVIDUAL HAZARDOUS SUBSTANCE SITES
LOCATION MAP**

PLATE 2

PROPOSED SURFACE WATER AND SEDIMENT SAMPLE LOCATIONS

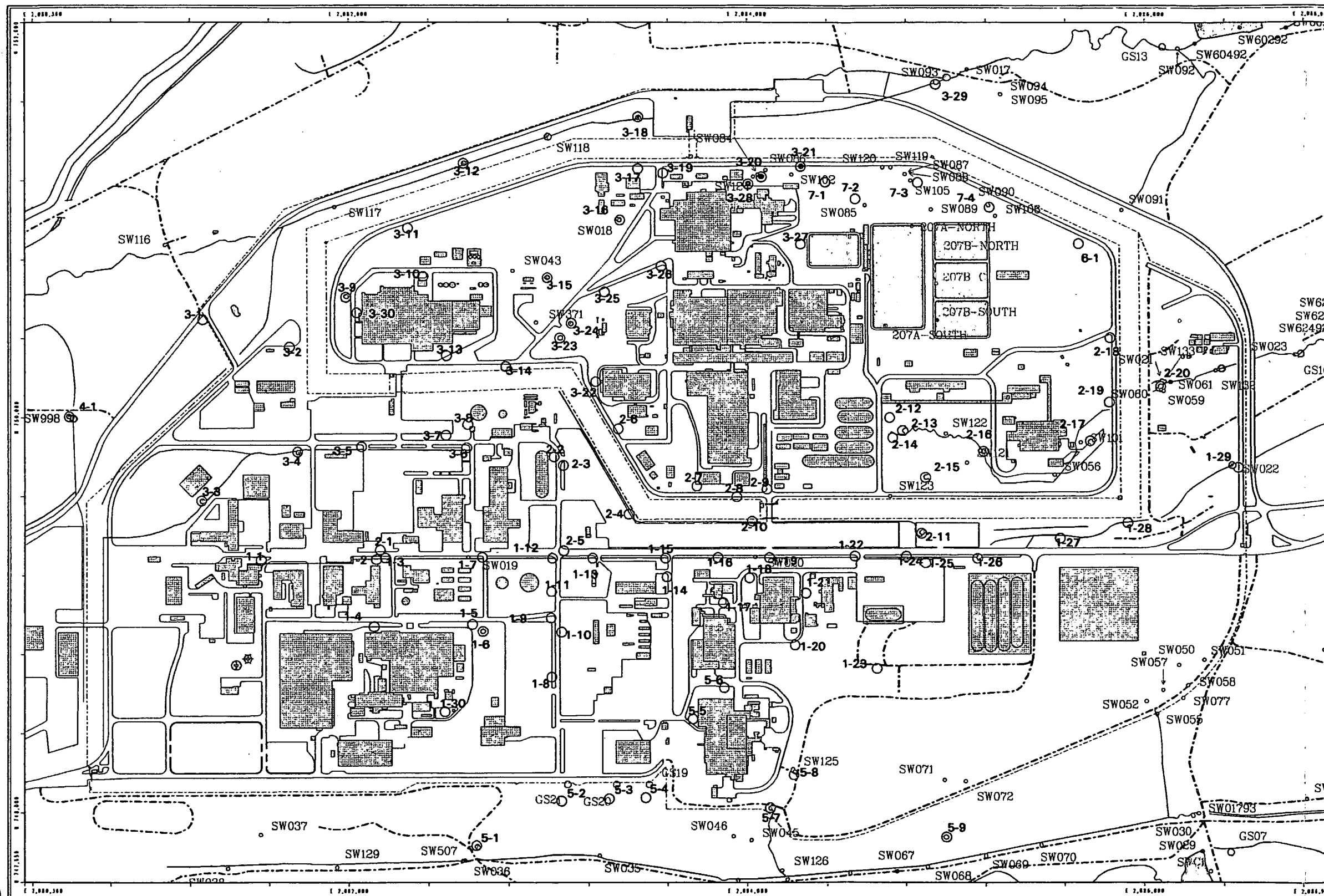
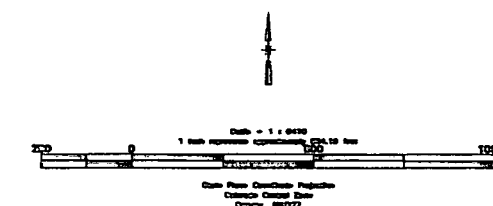


FIGURE 2-1
Existing and Proposed
Surface-Water and Sediment
Sampling Locations

EXPLANATION

- Surface-water and sediment stations
- NPDES/FFCA permit monitoring sites
- Gaging stations
- NPDES storm water permit sampling sites
- Proposed OU12 Sediment Sample Location
- Proposed OU12 Surface-Water Sample Location

- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Paved roads
- Dirt roads



U.S. Department of Energy
Rocky Flats Plant

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MAP ID: SW

December 21, 1994

TABLE 2-1
OU12 Field Sampling Plan
Results from the 1989 Surface-Water and Sediment Geochemical Characterization Report
for Selected Radionuclides, Organics, Metals, and Water Quality Parameters at Selected Locations in the Industrial Area
Page 1 of 2

PARAMETER	Source of Standard (1)	Stream Standard (2)	UTL (3)	Solar Ponds				903 Pad				Upper South Walnut Creek			
				Average	Maximum	Std. Deviation	Sample Size	Average	Maximum	Std. Deviation	Sample Size	Average	Maximum	Std. Deviation	Sample Size
TOTAL RADIONUCLIDES (pCi/L)															
Americium-241	WQCC (5)	0.05	0.02	1.89	90	11	68	5.5	33	9.9	17	0.12	1.3	0.25	30
Cesium-137	NA	NA	NA	0.11	4.7	0.69	76								
Gross alpha	WQCC (5)	7*/11**	28.06	200.00	1400	280	70	67	350	99	17	66	780	150	31
Gross beta	WQCC (5)	5*/19**	30.35	240.00	2500	370	70	18	65	14	17	51	570	120	31
Plutonium-239	WQCC (5)	0.05	0.02	2.43	120	14.5	73	17	110	30	17	0.40	3.3	0.88	32
Radium-226	WQCC (SW)	5	16.56	1.62	20	3.6	59					1.9	7.2	2.3	18
Strontium-90	WQCC (SW)	8	4.88	0.35	3.2	0.604	76					0.19	2.2	0.50	32
Tritium	WQCC (5)	500	711.94	2000.00	13000	2400	78					100	500	200	32
Uranium, Total	WQCC (5)	5*/10**	2.69	130.00	1000	190	49	7.4	18	5.7	11	5.7	17	3.4	25
Uranium-233, -234	WQCC (5)	5*/10**	2.16	100.00	860	170	76	3.5	10	2.6	17	2.9	7.7	1.7	32
Uranium-235	WQCC (5)	5*/10**	0.28	4.34	66	10	76	0.16	0.70	0.19	17	0.17	1.0	0.19	32
Uranium-238	WQCC (5)	5*/10**	1.73	54.33	370	78	76	2.9	7.8	2.2	17	2.5	7.9	1.4	32
DISSOLVED RADIONUCLIDES (pCi/L)															
Americium-241	NA	NA	0.50	0.04	0.64	0.15	19								
Cesium-137	NA	NA	4.67	0.04	0.90	0.36	19					0.00	0.60	0.59	6
Gross alpha	NA	NA	28.71	280.00	1900	440	19	5.0	8.0	4.2	2	5.5	16	5.6	6
Gross beta	NA	NA	25.30	390.00	3800	870	19								
Plutonium-239	NA	NA	0.79	0.15	2.4	0.55	19	0.10	0.20	0.14	2				
Uranium-235	NA	NA	0.78	3.13	12	3.4	19								
Uranium-238	NA	NA	10.93	48.23	130	45	19								
VOLATILE ORGANICS (µg/L)															
1,1-dichloroethane	NA	NA	NA									4.7	50	8.03	37
1,2- dichloroethylene	WQCC (SW)	70 (cis)/100(tran)	NA	3.50	15	3.0	81	7.2	44	12	25				
Acetone	NA	NA	NA	19.00	180	36	56					13	130	26	29
Carbon disulfide	NA	NA	NA	3.60	19	3.3	77								
Carbon tetrachloride	WQCC (5)	18	NA	8.20	100	16	81	4.5	46	8.8	25	47	430	95	36
Chloroform	WQCC (SW)	6	NA	3.50	13	2.9	81	2.9	8.0	1.3	25	18	82	24	36
Ethylbenzene	WQCC (SW)	680	NA	3.40	13	2.7	81								
Methylene chloride	WQCC (SW)	4.7	NA	4.50	13	3.6	47	2.8	9.0	1.5	20	3.3	11	2.02	25
Tetrachloroethene	WQCC (SW)	0.8	NA					3.9	19	4.2	25	53	280	84	37
Trichloroethene	WQCC (SW)	66	NA	3.40	13	2.8	80	11	65	15.8	25	41	260	63	37
Vinyl chloride	WQCC (SW)	2	NA									7.1	25	5.1	37
SEMIVOLATILE ORGANICS (µg/L)															
Bis[2-ethylhexyl]-phthalate	WQCC (SW)	1.8	NA	7.4	32	9.0	13	(None Detected)				(None Detected)			

(See footnotes on following page.)

Table 2-1 (continued)
OU12 Field Sampling Plan
Results from the 1989 Surface-Water and Sediment Geochemical Characterization Report
for Selected Radionuclides, Organics, Metals, and Water Quality Parameters at Selected Locations in the Industrial Area
Page 2 of 2

PARAMETER	Source of Standard (1)	Stream Standard (2)	UTL (3)	Solar Ponds				903 Pad				Upper South Walnut Creek			
				Average	Maximum	Std. Deviation	Sample Size	Average	Maximum	Std. Deviation	Sample Size	Average	Maximum	Std. Deviation	Sample Size
WATER QUALITY (mg/L)															
Specific conductivity (umhos/cm)	NA	NA	NA	4500.00	37000	5100	122	900	1500	280	31	740	1400	370	48
Dissolved oxygen	WQCC (5)	5.00	NA	4.99	23	3.2	122	2.4	10	2.3	31	6.6	70	9.8	48
Field pH	WQCC (5)	6.5-9.0	9.32	7.50	10	0.67	122	7.4	9.6	0.65	31	7.5	8.5	0.65	48
Total dissolved solids	NA	NA	302.28	5100.00	41000	7600	119	500	790	140	34	420	3300	450	51
Bicarbonate	NA	NA	191.32	330.00	1000	180	119	390	710	140	34	280	540	160	51
Chloride	WQCC (5)	250	53.20	130.00	960	170	119	51	170	28	34	36	81	20	51
Nitrate (N)	WQCC (5)	10.0	NA	2100.00	19000	3000	119	14	110	22	25	13	25	7.5	35
Nitrate/Nitrite (N)	WQCC (5)	10.0	1.35	660.00	9900	1200	119	3.4	24	4.6	34	3.0	5.6	1.7	51
Sulfate	WQCC (5)	250	37.83	190.00	1400	200	119	60	120	30	34	43	74	17	51
DISSOLVED METALS (mg/L)															
Aluminum	WQCC (SW)	0.087	0.48	0.19	2.4	0.27	82								
Antimony	NA	NA	0.06	0.04	0.25	0.028	88	0.045	0.25	0.05	27				
Barium	NA	NA	0.13	0.13	0.73	0.093	91	0.203	0.34	0.08	27	0.14	0.24	0.50	33
Beryllium	WQCC (5)	0.004	NA									0.0023	0.0053	0.00085	29
Cadmium	WQCC (5)	0.0015	NA	0.01	0.048	0.007	86								
Calcium	NA	NA	50.36	230.00	1500	250	91	110	150	23	27	84	130	38	33
Chromium	WQCC (5) (Cr-VI)	0.011	NA	0.01	0.032	0.0046	84								
Copper	WQCC (5)	0.016	0.02	0.02	0.0908	0.017	80					0.013	0.029	0.0034	27
Iron	WQCC (5)	0.3	0.56	0.25	9.9	1.1	86	0.74	8.5	1.8	27				
Lead	WQCC (5)	0.00646	0.01	0.00	0.025	0.0044	74								
Lithium	NA	NA	0.06	2.46	85	13	88								
Magnesium	NA	NA	9.80	57.62	390	62	91	19	31	7.4	27	16	29	7.2	33
Manganese	WQCC (5)	0.56	0.14	0.12	1.03	0.22	91	0.21	0.59	0.19	26	0.11	0.701	0.21	33
Mercury	WQCC (SW)	0.00001	NA	0.00	0.0018	0.0002	86								
Molybdenum	NA	NA	NA	0.05	0.25	0.026	91								
Nickel	WQCC (5)	0.125	NA	0.02	0.087	0.0102	87								
Potassium	NA	NA	3.59	160.00	3300	440	89	3.4	16	3.1	25	2.2	2.5	0.60	29
Selenium	WQCC (SW)	0.017	0.01	0.01	0.037	0.0065	89	0.0030	0.013	0.0025	19				
Sodium	NA	NA	34.10	530.00	7600	1000	91	33	89	23	27	32	60	15	33
Strontium	NA	NA	0.97	1.78	12	1.8	88					0.52	1.2	0.19	31
Zinc	WQCC (5)	0.144	0.06	0.18	4.2	0.62	89	0.34	1.8	0.52	24	0.13	0.63	0.14	31

Source:
Adapted from the final 1989 Surface-Water And Sediment Geochemical Characterization Report. (EG&G 1992b)

Units:
Cr-VI = hexavalent chromium
mg/L = milligrams per liter
pCi/L = picocuries per liter
Std. = standard

UTL = Upper Tolerance Limit
µg/L = micrograms per liter
µmhos/cm = micromhos per cubic meter

NOTES:

- (1) Sources of potentially applicable standards include (a) Water Quality Control Commission (WQCC) Segment 5 stream standards as identified in Section 3.8.0 of 5 CCR 1002-8, Classifications and Numeric Standards for the South Platte River Basin; Laramie River Basin; Republican River Basin; Smoky Hill River Basin; and b) WQCC state-wide (WQCC SW) standards for constituents that have no site-specific standards. Where more than one state-wide standard was available, the most conservative value was chosen. For constituents with "Table Value Standards," a hardness value of 143 mg/L was used to calculate the standard. NA indicates that no WQCC standard is applicable. For constituents with "Table Value Standards," a hardness value of 143 mg/L was used to calculate the standard. NA indicates that no WQCC standard is applicable.
- (2) In cases where two values are given, * denotes the standard for Woman Creek and ** denotes the standard for Walnut Creek.
- (3) Background Upper Tolerance Limits (UTLs) were taken from the 1993 Background Geochemical Characterization Report (EG&G 1993a). These UTLs are based on 99/99 upper tolerance limits; which are the values below which there is 99 percent probability that 99 percent of the data in a normally distributed population would fall.

TABLE 2-5
OU12 Field Sampling Plan
Hydrograph Integrated Stormwater Quality Data from November 1991 to August 1992 (A)

Sample Location:	Source of Standard (B)	Stream Standard	SW022		SW023		SW093		SW118		SW027		SW998	
			Maximum	Average	Maximum	Average	Maximum	Average	Maximum	Average	Maximum	Average	Maximum	Average
TOTAL METALS (µg/L) (C)														
Aluminum	NA	NA	24100	5840	38900	11828	34800	13018	78200	22234	20200	4604	11600	5423
Antimony	WQCC (SW)	14	402	68.5	55.6	20.2	34.9	19	53.6	15.6	12.5	12	12.5	10
Arsenic	WQCC (4/5)	50	69	31	72	27.8	37.5	27.3	37.5	26.6	37.5	31.3	37.5	23.5
Arsenic (D)	WQCC (4/5)	50	6.5	2.71	14.9	5.6	7.2	2.9	16.9	4.28	1.9	0.82	3.9	2.2
Barium	WQCC (SW)	1000	200	79.6	282	139	225	132	509	229	1179	112	62.5	38.9
Beryllium	WQCC (SW)	0.0076	2.2	0.79	1.5	0.58	1.5	0.7	1.8	0.78	0.5	0.47	0.5	0.43
Cadmium	WQCC (SW)	10	7	2.65	3.7	1.83	5.6	2.54	2	1.51	2	1.93	2	1.52
Chromium	WQCC (4/5) for Cr-III/Cr-VI (F)	50/50	34.9	10.9	53.4	19.6	39.1	16	72.8	22.6	25.5	6.68	21.7	10.1
Cobalt	NA	NA	11.6	4.64	13.7	5.15	8.5	6.2	24.1	8.01	3.5	3.1	3.5	2.9
Copper	WQCC (SW)/WQCC (5)	1000/23	45.4	15.5	60.6	27.7	39.5	19	73	27.3	22.7	7.15	21.2	11
Iron	WQCC (4)/WQCC (5)	1000/13200	26300	6140	32800	11996	34300	12960	66200	21896	17100	3837	9990	4733
Lead	WQCC (SW)/WQCC (5)	50/28	59.5	32.5	60.5	33.7	29	23.7	29.1	25.9	27	23.1	29	24.6
Lead (D)	WQCC (SW)/WQCC (5)	50/28	32.9	12.9	82.2	33.8	36	24.6	56.2	18.1	8.2	3.52	37.3	20.6
Manganese	WQCC (4/5)	1000	482	116	912	341	536	380	1870	679	155	47.2	151	66.6
Mercury (E)	WQCC (SW)	2	0.2	0.11	0.2	0.11	0.1	0.1	0.23	0.11	0.1	0.1	0.1	0.1
Molybdenum	NA	NA	60.4	13	6	5.07	6	5.28	6	5.21	16.7	7.98	6	5.03
Nickel	WQCC (SW)	200	21.3	10.8	45.5	13.4	14.1	9.51	50.9	20.6	9.5	8.74	17.5	10.7
Selenium	WQCC (4/5)	10	40	22.7	31	19.2	31	21.8	31	21	31	26	31	18.8
Selenium (D)	WQCC (4/5)	10	1.3	0.77	1.9	1.13	0.5	0.5	21	0.97	0.5	0.5	0.5	0.5
Silver	WQCC (SW)	50	7	2.91	2.5	1.85	2.5	2	2.5	1.94	2.5	2.25	2.5	1.83
Strontium	NA	NA	262	136	411	190	136	104	348	253	457	268	40.6	26.2
Thallium	WQCC (SW)	0.012	288	78	66.5	45.4	66.5	47.5	66.5	47.6	66.5	55.5	66.5	41.4
Thallium (D)	WQCC (SW)	0.012	1	0.57	3	0.68	0.5	0.5	4.2	1.26	0.5	0.5	1.5	1
Vanadium	NA	NA	59.9	15.3	91.3	32.2	84.4	31.2	160	49.2	45.7	12.5	26.3	14.3
Zinc	WQCC (SW)/WQCC (5)	2000/350	346	103	658	342	280	203	473	188	107	41.7	221	146
INORGANICS (mg/L)														
Calcium	NA	NA	39.2	26.4	60.6	34.6	19.8	18.1	47.1	34.5	73.4	44.3	6.61	5.31
Magnesium	NA	NA	8.15	5.1	13.7	7.62	8.09	5.15	22.1	11.9	14.7	9.26	2.98	1.75
Potassium	NA	NA	6.8	4.58	8.09	4.81	7.21	4.36	13.2	5.75	5.65	4.1	4.18	2.54
Sodium	NA	NA	39.6	18.6	44.6	17.3	24.9	17.8	141	85.5	37.2	22.3	6.55	3.63
Sulfate	WQCC (4/5)	250	25.9	6.66	38.4	14.3	11	6.72	23	12.2	63.1	24.8	4.85	3.9
Chloride	WQCC (4/5)	250	68	29.6	172	47.9	120	57.3	297	176	123	72	3.95	3.01
Fluoride	WQCC (SW)	2	0.71	0.26	0.57	0.24	0.35	0.23	1.3	0.33	0.48	0.32	0.27	0.26
Alkalinity	NA	NA	142	53.5	112	78.9	54.4	43.8	86.1	61.1	156	113.3	12.2	8.6
pH	WQCC (4/5)	6.5-9.0	8.1	7.6	8	7.5	7.9	7.3	7.9	7.4	8.1	7.8	7.6	6.9
Specific Conductance	NA	NA	540	216	560	311	260	203	1040	709	770	402	100	70
Dissolved Solids	NA	NA	271	153	470	224	184	131	582	394	474	273	102	58
Total Suspended Solids	NA	NA	570	200	1232	402	568	380	1659	505	384	94	219	90
Ammonia as N	WQCC (4)/WQCC (5)	0.1/(1.8/0.7) (G)	0.32	0.1	1.7	0.35	0.26	0.11	0.5	0.09	0.1	0.04	0.1	0.06
NO3/NO2 as N	WQCC (4/5)	10	1.76	0.97	1.82	1.28	1.22	0.99	0.84	0.63	1.2	0.74	0.61	0.39
Total Phosphorus as P	NA	NA	0.54	0.28	1.44	0.54	1.1	0.68	0.86	0.35	0.84	0.07	0.06	0.03

Table Notes:

(A) Hydrograph events were sampled with automatic samplers at the beginning of the storm runoff at pre-set time intervals until the stream-channel stage declined to a pre-set level.

Data were reported in the NPDES Permit Application Monitoring Report for RFETS (EG&G 1993b)

(B) Sources of potentially applicable standards include (a) Water Quality Control Commission (WQCC) Segment 4 and 5 stream standards as identified in Section 3.8.0 of 5 CCR 1002-8, Classifications and Numeric Standards for the South Platte River Basin; Laramie River Basin; Republican River Basin; Smoky Hill River Basin; and (b) WQCC statewide (WQCC SW) standards for constituents that have no site-specific standards. When more than one statewide standard was applicable, the most conservative standard was selected. For constituents with "Table Value Standards," a hardness value of 143 milligrams per liter (mg/L) was used to calculate the standard. NA indicates that no WQCC standard is applicable.

(C) All stormwater quality metals data are total recoverable concentrations.

(D) Analytical method used was graphite furnace atomic absorption (AA) spectroscopy.

(E) Analytical method used was cold vapor atomic absorption (AA) spectroscopy.

(F) Cr-III is chromium III and Cr-VI is hexavalent chromium.

(G) Temporary modifications to Segment 5 have a value of 1.8 mg/L for March 1 through June 30 and a value of 0.7 mg/L for July 1 through April 31.

Table 2-6
OU12 Field Sampling Plan
RFETS Stormwater Quality Data Summary
Water Years 1991-1993
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PARAMETER	GS10							GS13						
Dissolved Metals (µg/L)	Sample #	Max Value	Min Value	Avg Value	# < MDL	*Exceeds	Standard**	Sample #	Max Value	Min Value	Avg Value	# < MDL	*Exceeds	Standard**
ALUMINUM	18	4450	19	312.11	17	5	87	10	120	28.3	62.79	10	2	87
ANTIMONY	18	33	23	24.67	18	18	6	10	29	23	23.60	10	10	6
ANTIMONY***	2	71	59	65.00	1	2	6	1	26	26	26.00	0	1	6
ARSENIC	18	90	2.8	58.69	18	0	150	10	90	64	66.60	10	0	150
BARIUM	18	87.4	1	42.70	18	0		10	93.3	30.3	48.29	10	0	
BERYLLIUM	18	1	1	1.00	18	0	4	10	1	1	1.00	10	0	4
CADMIUM	18	5	3	4.72	18	0	1.5	10	5	4	4.90	10	10	1.5
CALCIUM	18	63300	330	27502.50	1	0		10	75900	19200	34040.00	0	0	
CESIUM	2	617	617	617.00	2	0		0				0		
CESIUM***	13	5	1	2.54	13	0		6	5	1	1.67	6	0	
CHROMIUM	18	11.4	3	7.79	17	0	50	10	8	4.5	7.65	10	0	50
COBALT	18	8	5	7.55	18	0		10	8	5	7.70	10	0	
COPPER	18	26.3	3	9.44	17	2	16	10	9.3	3	5.70	10	0	16
IRON	18	6000	5.2	387.29	15	1	300	10	82.7	27.5	57.77	10	0	300
LEAD	18	286	2	98.22	16	17	6.46	10	75	47	72.20	10	10	6.46
LEAD***	11	142	1	25.18	9	2	6.46	5	5	1	1.80	4	0	6.46
LITHIUM	18	10.3	1	4.54	18	0		10	16.8	2.6	5.24	10	0	
MAGNESIUM	18	11800	44	5046.33	8	0		10	23100	3990	7980.00	2	0	
MANGANESE	18	458	1	60.60	7	0	560	10	32.4	1.6	15.03	4	0	560
MERCURY	4	0.2	0.2	0.20	4	4	0.01	0				0	0	0.01
MOLYBDENUM	18	15	9	10.01	18	0		10	11	9	9.20	10	0	
NICKEL	18	15	12	14.61	18	0	125	10	15	12	14.70	10	0	125
POTASSIUM	18	4410	575	2647.72	18	0		10	5730	2300	3733.00	8	0	
SELENIUM	18	48	2	37.06	18	16	17	10	48	41	41.70	10	10	17
SILICON	17	9960	110	2621.00	0	0		9	6960	2360	3602.22	0	0	
SILVER	18	6	4	5.72	18	18	0.59	10	6	5	5.90	10	10	0.59
SODIUM	18	41900	332	18862.22	2	0		10	52000	13300	21490.00	0		
STRONTIUM	18	381	1	171.56	12	0		10	591	119	225.90	6	0	
THALLIUM	18	191	3	166.56	18	16	15	10	191	127	184.60	10	10	15
THALLIUM***	13	5	1	2.54	13	0	15	6	5	1	1.67	6	0	15
TIN	18	21	10	19.17	18	0		10	21	10	19.90	10	0	
VANADIUM	18	14.1	5	10.62	18	0		10	11	7	10.60	10	0	
ZINC	18	313	5.3	42.72	12	1	144	10	10.7	4.7	7.27	9	0	144
* No value is presented for those analytes without Numeric Standards														
	GS10							GS13						
Total Metals (µg/L)	Sample #	Max Value	Min Value	Avg Value	# < MDL	*Exceeds	Standard**	Sample #	Max Value	Min Value	Avg Value	# < MDL	*Exceeds	Standard**
ALUMINUM	31	26000	19	8616.09	5	0		21	33000	67.3	8277.87	1	0	
ANTIMONY	31	33	6.9	21.23	31	23	14	19	30	6.9	21.99	19	16	14
ANTIMONY***	2	29	25	27.00	0	2	14	1	1	1	1.00	0	0	14
ARSENIC	31	90	0.35	37.01	22	16	50	20	94	0.35	37.30	14	10	50
BARIUM	31	367	1	116.07	18	0	1000	21	280	52.9	115.92	10	0	1000
BERYLLIUM	31	2.6	0.3	1.14	28	0	0.0076	19	2.8	0.3	1.24	17	19	0.0076
CADMIUM	29	5	1.15	3.53	28	0	10	17	40	1.2	5.67	17	1	10
CALCIUM	31	83300	330	37064.35	2	0		21	82100	22700	39419.05	0	0	
CESIUM	14	617	250	356.00	14	0		9	500	50	283.33	9	0	
CESIUM**	13	147	1	24.77	0	0		6	5	1	1.67	0	0	
CHROMIUM	31	34.5	2.75	13.81	11	0	50	20	35	2.75	10.53	13	0	50
COBALT	31	25	1.35	7.64	25	0		19	25	1.8	7.16	16		
COPPER	31	69.2	3	26.23	10	16	23	21	36	2.7	14.31	12	2	23
IRON	31	35300	11	9116.92	4	6	13200	21	33000	77.8	7811.75	1	4	13200
LEAD	31	286	0.4	135.32	19	19	28	21	286	0.4	112.85	10	122	28
LEAD***	11	2624	8	822.09	0	10	28	5	1192	86	481.60	0	5	28
LITHIUM	31	50	1	11.26	20	0		21	23	4.8	10.71	10	0	
MAGNESIUM	31	21800	44	7964.32	7	0		21	21600	5220	9634.29	0	0	
MANGANESE	31	1370	1	338.28	5	2	1000	21	950	10	243.96	1	0	

Table 2-6
OU12 Field Sampling Plan
RFETS Stormwater Quality Data Summary
Water Years 1991-1993
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MERCURY	14	0.3	0.1	0.14	12	14	2	9	1.1	0.1	0.26	8	0	2
MOLYBDENUM	31	100	1.75	11.85	27	0		19	25	2.9	10.41	19	0	
NICKEL	31	35.2	5.35	14.24	24	0	200	19	29	2.95	14.57	16	0	200
POTASSIUM	31	6750	575	3905.45	15	0		21	8100	2260	4520.95	6	0	
GS10														
Total Metals [µg/L]	Sample #	Max Value	Min Value	Avg Value	# < MDL	*Exceeds	Standard**	Sample #	Max Value	Min Value	Avg Value	# < MDL	*Exceeds	Standard**
SELENIUM	29	48	0.35	23.92	29	16	10	19	48	0.6	23.25	18	10	10
SILICON	27	9960	0	1710.11	1	0		20	7490	0	2091.50	0	0	
SILVER	30	8.8	1.05	4.81	26	0	50	20	7	1.45	4.84	20	0	50
SODIUM	31	55000	343	20582.61	3	0		21	49800	13500	24609.52	0	0	
STRONTIUM	18	433	1	192.83	11	0		10	572	141	234.90	5	0	
THALLIUM	31	191	0.45	93.39	30	31	0.012	20	191	0.7	85.68	20	20	0.012
THALLIUM***	13	5	1	2.54	0	13	0.012	6	5	1	1.67	0	6	0.012
TIN	31	100	4.7	22.92	30	0		18	100	5.2	27.54	18	0	
VANADIUM	18	59.2	5	23.38	16	0		10	18.7	7	11.11	10	0	
ZINC	31	1190	7	331.90	4	12		21	340	3.6	93.96	2	0	350
* No value is presented for those analytes without Numeric Standards														
GS10														
Radionuclides [pCi/L]	Sample #	Max Value	Min Value	Avg Value		*Exceeds	Standard**	Sample #	Max Value	Min Value	Avg Value		*Exceeds	Standard**
AMERICIUM-241	22	0.45	-0.003075	0.15		16	0.05	10	0.093	0.002	0.04		4	0.05
CESIUM-137	8	0.34	0.024	0.14		0		10	0.28	-0.095	0.08		0	
CURIUM-244	3	0.016	-0.004	0.01		0		3	0.028	-0.012	0.01		0	
GROSS ALPHA	23	25	1.8	7.55		4	11	16	7	-0.37	4.06		0	11
GROSS BETA	22	21.5	2	10.34		3	19	14	10	0.63	5.90		0	19
NEPTUNIUM-237	3	0	-0.009	0.00		0		2	0.041	0.018	0.03		0	
PLUTONIUM-239	28	0.58	0.005	0.12		13	0.05	18	0.285	-0.003	0.06		7	0.05
RADIUM-226	2	0.47	0.38	0.43		0	5	2	0.16	0.11	0.14		0	5
RADIUM-228	1	2.7	2.7	2.70		0	5	1	1.4	1.4	1.40		0	5
STRONTIUM-89	7	0.42	-0.74	0.07		0		11	0.65	-0.069	0.33		0	
STRONTIUM-90	1	0.27	0.27	0.27		0	8	1	0.39	0.39	0.39		0	8
THORIUM-232	3	0.91	0.19	0.59		0	60	3	0.69	0.01	0.28		0	60
TRITIUM	11	276.3	-150	31.34		0	500	8	140.55	-21	84.98		0	500
URANIUM-233	15	55	0.26	4.27		1	10	7	2.773	0.499	0.99		0	10
URANIUM-234	0					0	10	1	1.1	1.1	1.10		0	10
URANIUM-235	28	0.29	-0.044	0.04		0	10	18	0.44	-0.005	0.08		0	10
URANIUM-238	28	2.222	0.072	0.85		0	10	18	4.9	0.442	1.81		0	10
* No value is presented for those analytes without Numeric Standards														
GS10														
Water Quality [mg/L]	Sample #	Max Value	Min Value	Avg Value		*Exceeds	Standard**	Sample #	Max Value	Min Value	Avg Value		*Exceeds	Standard**
ALKALINITY	14	116	43.6	68.32		0		7	246.6	65.2	108.84		0	
CARBONATE	15	10	0	0.67		0		7	7.7	0	1.10		0	
CHLORIDE	15	44.5	12.9	20.95		0	250	7	49.6	16.6	26.44		0	250
CONDUCTIVITY	14	674	190	359.93		0		7	766	216	362.00		0	
FLUORIDE	15	2.5	0.23	0.75		1	2	7	0.94	0.5	0.65		0	2
NITRATE	12	4.56	1.03	1.84		0	10	5	1.39	0.78	0.97		0	10
pH	14	7.9	6.51	7.13		0	6.5-9.0	7	7.9	6.9	7.43		0	6.5-9.0
SULFATE	15	121	14.3	50.09		0	250	7	53.1	13.1	23.86		0	250
TOTAL DISSOLVED SOLIDS	15	440	132	225.80		0		7	469	157	241.00			
TOTAL SUSPENDED SOLIDS	15	550	13	194.47		0		7	233	4	83.00			

* No value is presented for those analytes without Numeric Standards. The test method used for metals analyses was inductively coupled plasma emissions spectrometry (ICPES). This test method has relatively high detection limits; therefore, the majority of exceedances noted are due to artificially inflated values calculated based on one-half of the method detection limit (MDL).

** WQCC Segment 5 stream standards for Big Dry Creek are provided for purposes of comparison. No value is presented for those analytes without WQCC numeric standards.

*** Sample was measured using Inductively Coupled Plasma Spectrometry, which has lower detection limits than ICPES. These data are available for selected metals for water year 1993 only.

Source: Wetherbee, Greg. 1994. Personal Communication between Greg Wetherbee, EG&G Surface Water Division, and Wright Water Engineers.

Note: # < MDL not available for radionuclides and water quality parameters.

avg value = average value

MDL = maximum detection limit

µg/L = micrograms per liter

max value = maximum value

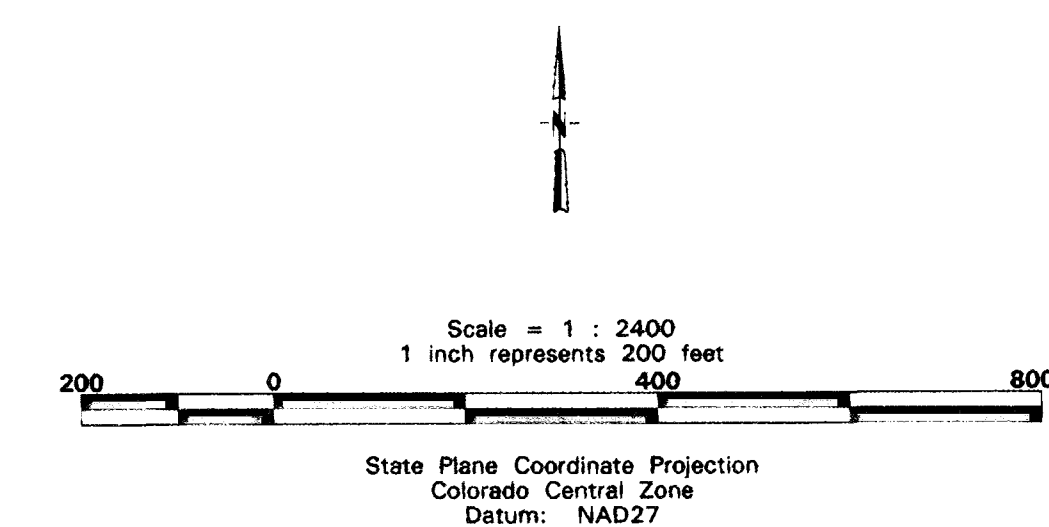
min value = minimum value

Mg/L = milligrams per liter

PLATE 1 **Operable Unit and** **IHSS Location Map**

EXPLANATION

- Major Drainage Basins
- Drainage Subbasins
- CSWAB4 - Subbasin Pathway
- Storm Drain System
- Wetlands
- Overland Flow Pathways
- Underground Flow Pathways
- Operable Unit 1
- Operable Unit 2
- Operable Unit 4
- Operable Unit 5
- Operable Unit 6
- Operable Unit 8
- Operable Unit 9
- Operable Unit 10
- Operable Unit 12
- Operable Unit 13
- Operable Unit 14
- Operable Unit 15
- Operable Unit 16
- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Paved roads
- Dirt roads

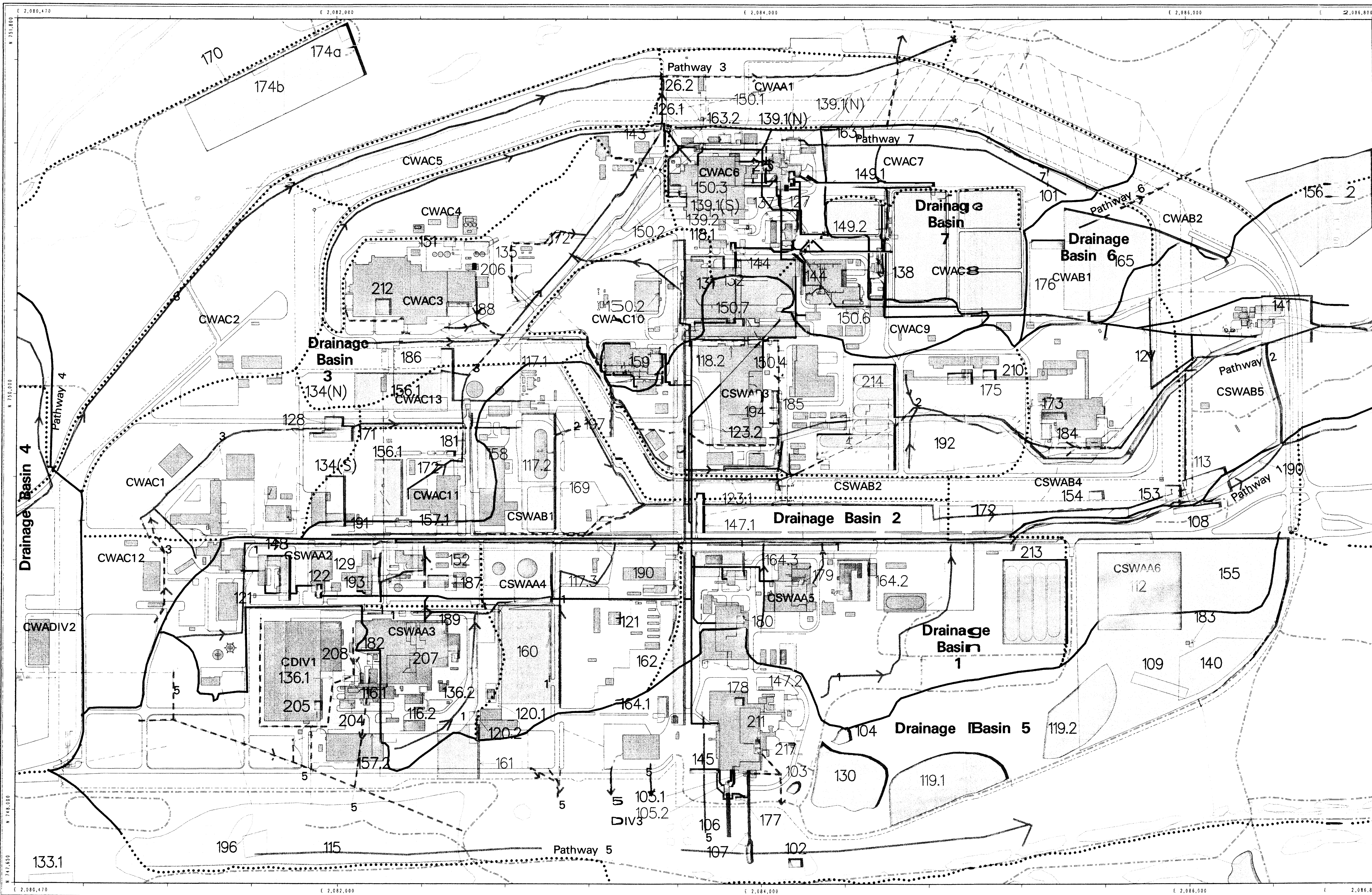


U.S. Department of Energy
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PLATE 2 **Proposed Surface-Water and** **Sediment Sampling Locations**

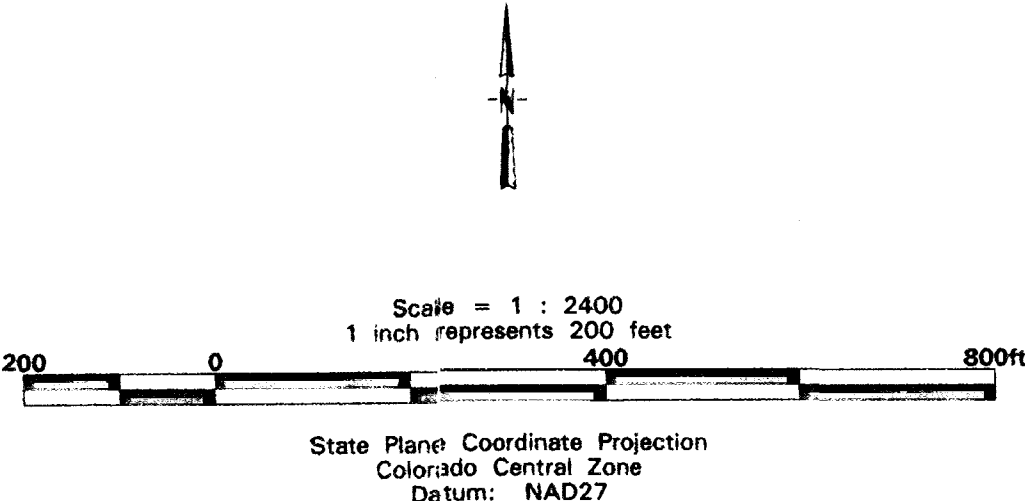
EXPLANATION

- Sediment Sampling Location
- Surface-Water Sampling Location
- Major Drainage Basins
- Drainage Subbasins
- CSWAB4 - Subbasin Pathway
- Storm Drain System
- Wetlands
- Overland Flow Pathways
- Underground Flow Pathways

- Buildings or other structures
- Lakes and ponds
- Streams, ditches, or other drainage features
- Fences
- Paved roads
- Dirt roads

Pathway Descriptions

- Pathway 1 - Drains most of southern Industrial Area and discharges to the east into buffer zone and B-series ponds.
- Pathway 2 - Drains central and east-central portions of the Industrial Area and discharges to the east into B-series ponds via South Walnut Creek.
- Pathway 3 - Drains north end of the Industrial Area to North Walnut Creek and A-series ponds.
- Pathway 4 - Drains western Industrial Area and discharges to McKay Diversion Canal.
- Pathway 5 - Drains from the southern Industrial Area and into the South Interceptor Ditch.
- Pathway 6 - Drains area east of Solar Evaporation Ponds, discharging to the A-series ponds.
- Pathway 7 - Drains area south of Interceptor Trench System.



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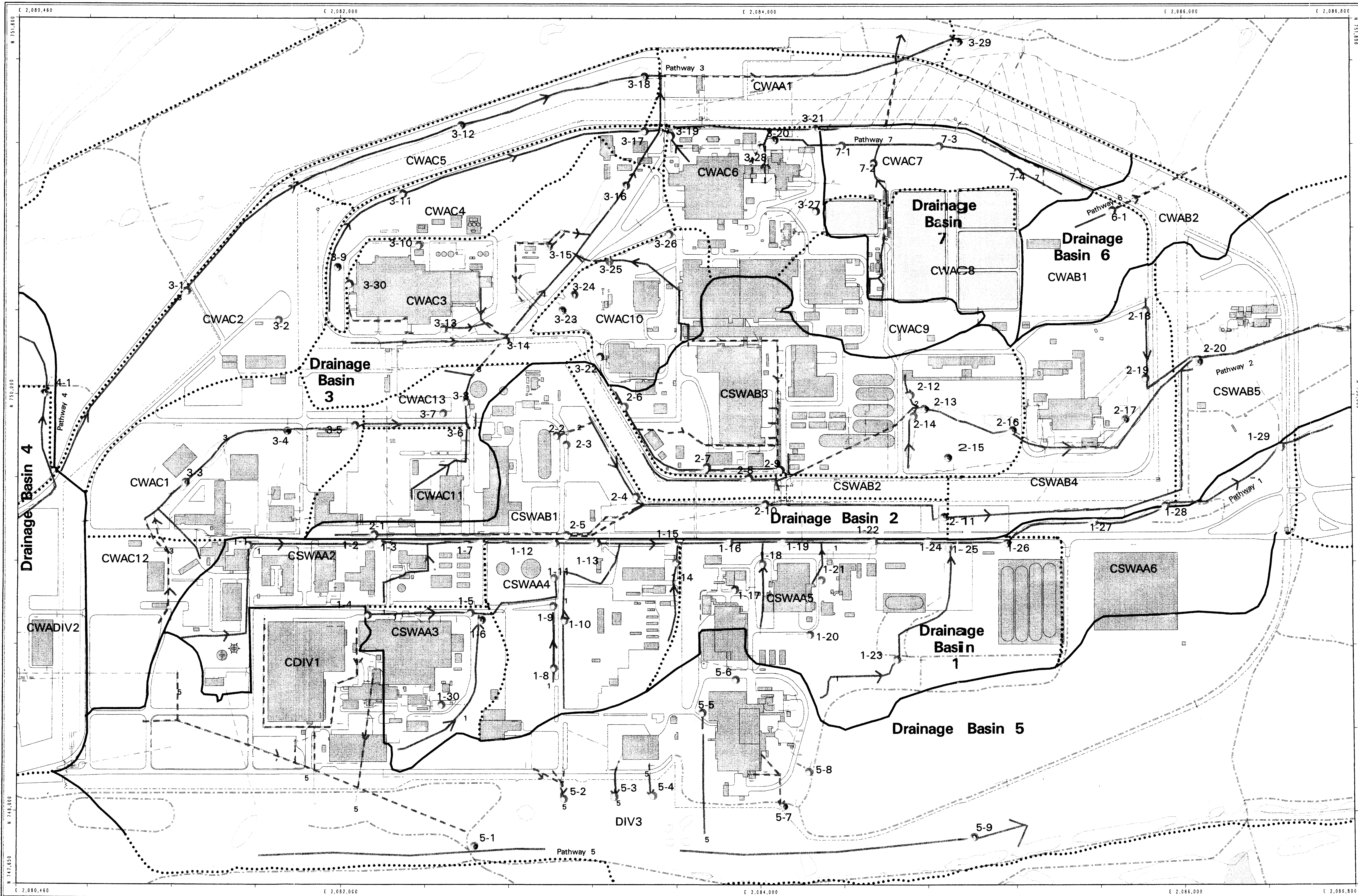
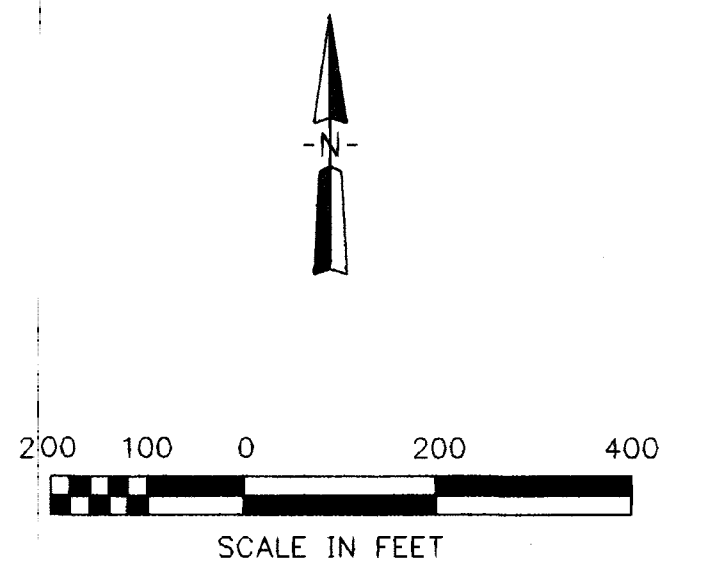


PLATE 3

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Structural Storm-Sewer Controls Inventory

LEGEND

- xx-00 STORM-SEWER STRUCTURES
- CURB & GUTTER
- FENCELINE
- INTERCEPTOR TRENCH
- DITCH
- CONCRETE DITCH
- APPROXIMATE BOUNDARY OF WETLAND VEGETATION
- INLET
- GRATE
- MANHOLE
- STRUCTURE



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NOTE: BASE MAPPING BY SCHARF AND ASSOCIATES.
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